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Arctic Land Use Research Program 1979: A Survey of the Aquatic Resources of the Central Keewatin Region of the Northwest Territories

Northern Affairs Program

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INTRODUCTION

The data in this report were collected and compiled as the fisheries contribution to the 1979/80 Arctic Land Use Research (ALUR) mapping program. The map series is funded jointly by the Department of Indian Affairs and Northern Development and the Department of the Environment. The maps provide a reconnaissance-level base of data for use in regional planning and in the application of the territorial Land Use Regulations.

Figure 1 outlines the 1979 study area including major river systems and communities. Fisheries information compiled for regions to the south and to the west may be found in the reports of MacDonald and Fudge (1979) and Stewart and MacDonald (1978).

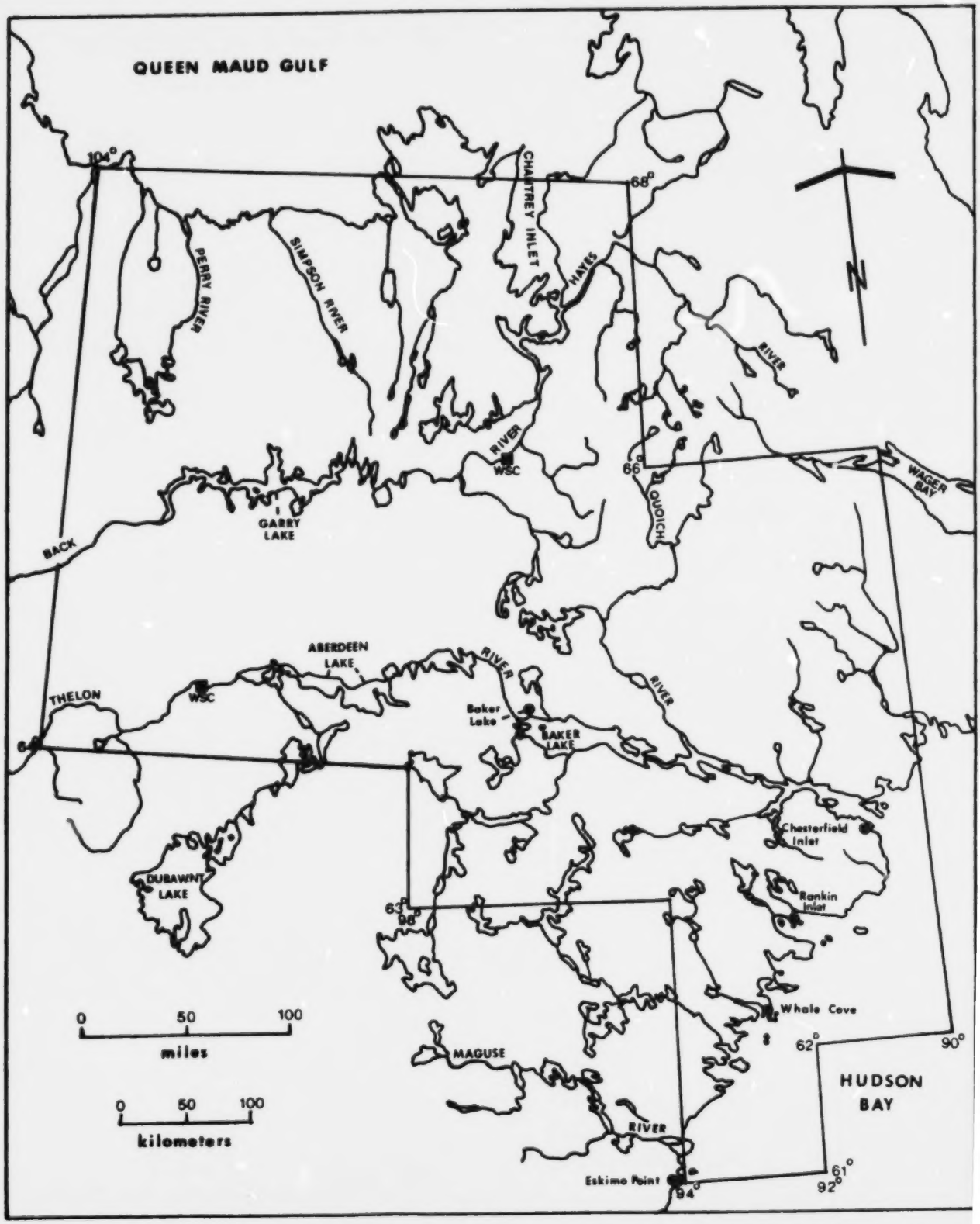

Fig. 1. The 1979 ALUR study area; major river systems, communities and Water Survey of Canada stations (WSC).

DESCRIPTION OF THE STUDY AREA

The study area (Fig. 1) covers 315,000 km^2 of Canadian shield lying mainly within the District of Keewatin. Most of the area north of 65° drains northward into Queen Maud Gulf and Chantrey Inlet. Areas south of this drain east, either into Chesterfield Inlet or directly into Hudson Bay.

Altitude and relief around Queen Maud Gulf are low, and marine sediments extend as far as 60 km inland. The relief around Chantrey Inlet is more variable, with low granite cliffs and bluffs rising out of the water to form hills up to one hundred meters high.

South of these coastal areas lies a gently undulating plateau which rises to heights of 300 m. This inland plateau not only includes lands surrounding and between the Back and Thelon rivers, but also extends across the Quoich River to the lands between Chesterfield Inlet and Wager Bay. Glacial debris covers much of the inland area. Moraines, eskers and drumlins show evidence of massive ice movement.

South of Chesterfield Inlet, the Hudson Bay lowlands form an enormous area of low relief and poorly developed drainage. A great part of the area is composed of wet muskeg and swamp with islands of unconsolidated glacial material. This region which is over 300 km wide has a very shallow gradient toward Hudson Bay. Extensive raised marine beaches and deposits are found great distances inland (Sater 1971).

The entire study area lies north of the tree line. Scrub willow (*Salix* spp.) and sedge border rivers, streams and lakes. Heaths and lichens form the dominant vegetation in well drained areas with tussock-forming bog cotton in the poorly drained areas.

The climate is similar over most of the study area, characterized by short, cool summers and long, cold winters. At Baker Lake, the mean annual temperature is -3°C and the winds prevail from the north with an average velocity of 23 kph. Total annual precipitation is 210 mm, of which 150 mm falls as rain and the rest falls as snow.

Of the five settlements in the area, four are along the west coast of Hudson Bay, and one (Baker Lake) is inland. The mainly Inuit populations in these settlements derive their income from raw fur sales, commercial fishing and handicrafts. The Baker Lake people depend more on caribou for food than do people in coastal communities, who are largely dependant on domestic fishing.

MATERIALS AND METHODS

The data presented in this report were compiled from a recent reconnaissance survey, previous studies, and comments of local residents. Experimental sampling was conducted during August 1979, using a float equipped Bell 206B Jet Ranger helicopter. Samples of fish, zooplankton and water were taken.

Fish were collected using Swedish nylon multifilament gill nets, 1.8 m deep with a 60 m topline, a 73 m bottom line and comprised of, in order, six panels with mesh sizes of 10 mm, 19 mm, 33 mm, 45 mm, 55 mm and 60 mm. Nets were set overnight in a variety of river and lake habitats. To test small streams, folding galvanized minnow traps were used.

Freshwater species were identified using McPhail and Lindsey (1970). These include Arctic char, *Salvelinus alpinus* (Linnaeus); Arctic cisco, *Coregonus autumnalis* (Pallas); Arctic grayling, *Thymallus arcticus* (Pallas); burbot, *Lota lota* (Linnaeus); lake chub, *Couesius plumbeus* (Agassiz); lake cisco, *Coregonus artedii* LeSueur; lake trout, *Salvelinus namaycush* Walbaum; lake whitefish, *Coregonus clupeaformis* (Mitchill); least cisco, *Coregonus sardinella* Valenciennes; longnose sucker, *Catostomus catostomus* (Forster); ninespine stickleback, *Pungitius pungitius* (Linnaeus); northern pike, *Esox lucius* Linnaeus; round whitefish, *Prosopium cylindraceum* (Pallas); slimy sculpin, *Cottus cognatus* Richardson; spoonhead sculpin, *Cottus ricei* (Nelson); and threespine stickleback, *Gasterosteus aculeatus* Linnaeus.

Marine species were identified according to an unpublished manuscript by D. E. McAllister. These include Arctic flounder,

Liopsetta glacialis (Pallas); fourhorn sculpin, *Myoxocephalus quadricornis* (Linnaeus); saffron cod, *Elginus gracilis* (Tilesius); and toothed cod, *Arctogadus borisovi* Drjagin; and yellowfin sole, *Limada asper* (Pallas).

All fish were measured for fork length (mm) and round weight (g). The majority of these were also dead sampled. Gonads were examined and degree of maturation was assigned according to the following scale.

Male	Female	Development
1	7	immature
2	8	mature
3	9	ripening
4	10	ripe
5	11	running
6	12	spent
	0	sex undistinguishable

Stomach contents were examined in the field, and where possible, fish therein were identified to species while invertebrates were identified to family.

For aging purposes, scales were taken from Arctic grayling, northern pike, cisco and whitefish, and were read using a Leitz Trichinoscope (model IX-Q). Otoliths were removed from Arctic char, burbot and lake trout and aged under a dissecting microscope by the techniques outlined in Grainger (1953).

Zooplankton were collected using a 73 micron mesh Wisconsin net with a 25 cm mouth diameter. The net was weighted at the mouth so

that zooplankton were collected on both the descent and ascent of vertical hauls. When current or drift made vertical hauls impractical, qualitative horizontal hauls were used. Specimens were preserved in > 10% formalin and all identifications and measurements were made by Dr. and Mrs. K. Patalas at the Freshwater Institute in Winnipeg.

Water chemistry samples were handled and measured following the techniques outlined by Stainton et al. (1977). Dissolved and particulate C, N and P; Na, K, Mg and Ca; Cl, and SO_4; and chlorophyll and pH were measured by the analytical unit at the Freshwater Institute in Winnipeg. Secchi depth (Welch 1942), secchi color, and water depth were also measured. A Y.S.I. Model 33 S-C-T Meter was used to make the conductivity and temperature measurements.

Stream discharge information was obtained from the Inland Waters Directorate (1978) and commercial fishing quotas were from the Manual of Fisheries Acts and Regulations (1979).

RESULTS

1. THE BACK RIVER SYSTEM

General:

The Back River stretches across the northern section of the study area. It drains 110,000 km^2 of barren ground, originating at Muskox Lake (elevation 337 m) and flowing 1020 km to Chantrey Inlet (Fig. 1). Our study dealt mainly with the lower half of the Back River drainage system (Fig. 2).

Except for the Pelly, Garry and Macdougall lakes area, the Back River flows through a well defined river valley. The river bank is generally steep, and most of the smaller tributaries exhibit little or no flow by mid-summer. Large tributaries include the Meadowbank, Herman and Montresor rivers.

The maximum daily discharge of the Back, as measured at the Water Survey of Canada station (66°05'N x 96°30'W)(Fig. 1) in 1978, was 4277 m^3/s (on July 12). The highest mean monthly flow in 1978 occurred in July at 2653 m^3/s and the lowest was 33 m^3/s occurring during May (Inland Waters Directorate 1979).

Fish Resources:

Thirty-two nets were set in the Back River, its related lakes and adjoining tributaries. All sampling was conducted between August 12 and 27, 1979. Sampling locations are presented in Fig. 2 and species distribution data by sampling location is in Table 1. Appendix 1 shows species distribution for the study area, combining both ALUR sampling data and data from other sources. Raw data are presented in Appendix 4.

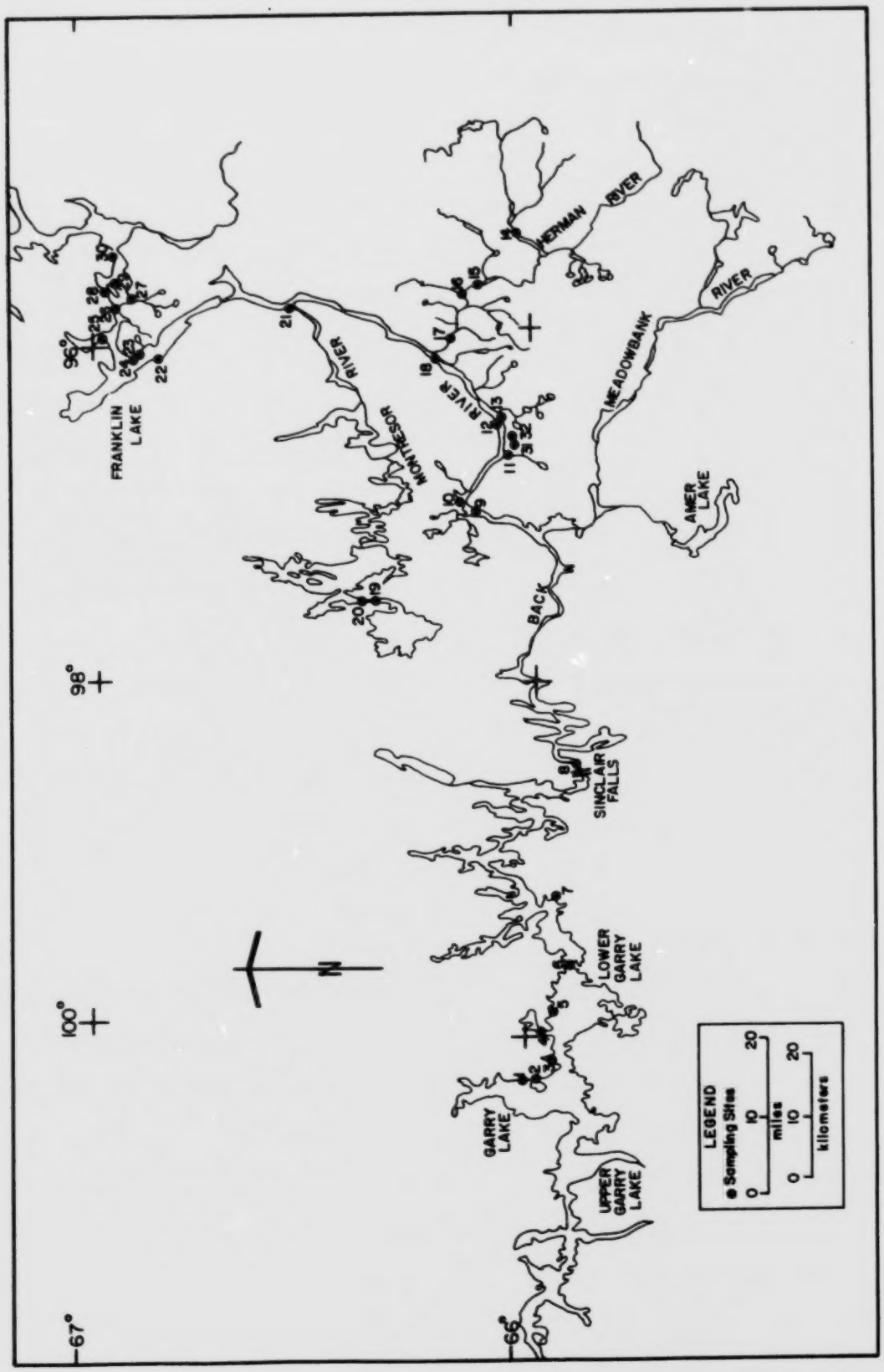

Fig. 2. The Back River system showing sampling locations.

Table 1. Species distribution by sampling site for the Back River system.

Set	Date	Location	Duration (hrs)	Species and Numbers Caught											
				Lake trout	Arctic char	Lake whitefish	Round whitefish	Lake cisco	Arctic cisco	Arctic grayling	Burbot	Ninespine stickleback	Slimy sculpin	Fourhorn sculpin	Sculpin species
1	18/8/79	66°00'N x 100°15'W	43.5	8		2									
2	18/8/79	65°59'N x 100°15'W	43	9						7	1				
3	18/8/79	65°57'N x 100°08'W	46	4		1									
4	18/8/79	65°58'N x 99°59'W	47	8			3								
5	18/8/79	65°56'N x 99°50'W	47	8											
6	18/8/79	65°54'N x 99°35'W	47	6	1	1	1								
7	17/8/79	65°55'N x 99°12'W	16	2			1					30**			
8	17/8/79	66°53'N x 98°31'W	16	4		2							3*		
9	14/8/79	66°09'N x 97°02'W	17.5	10		1	11								1*
10	14/8/79	66°10'N x 96°58'W	17.5	4		8	3	1							
11	14/8/79	66°04'N x 96°43'W	16.5	3			2		2						
12	27/8/79	66°05'N x 96°31'W	22	6			9	1		1					1*
13	27/8/79	66°04'N x 96°29'W	22	2			1				2				
14	13/8/79	66°01'N x 95°29'W	22	2			11								
15	13/8/79	66°06'N x 95°45'W	27	1								1*			
16	13/8/79	66°09'N x 95°47'W	27	7											
17	13/8/79	66°11'N x 96°03'W	28	7											
18	13/8/79	66°13'N x 96°10'W	27.5	6		1	6								2*
19	26/8/79	66°20'N x 97°32'W	16.5	7		15	3	1			1				
20	26/8/79	66°22'N x 97°32'W	16.5	7		20	1								
21	15/8/79	66°33'N x 95°48'W	14	3		2			5						
22	15/8/79	66°52'N x 96°05'W	14.5	1		9	3		4						
23	15/8/79	66°54'N x 96°04'W	16.5	10		2	10			1					

Table 1. (Cont'd.)

Set	Date	Location	Duration (hrs)	Species and Numbers Caught												
				Lake trout	Arctic char	Lake whitefish	Round whitefish	Lake cisco	Arctic cisco	Arctic grayling	Burbot	Ninespine stickleback	Slimy sculpin	Fourhorn sculpin	Sculpin species
24	15/8/79	66°55'N x 96°04'W	16.5	7			13			1				1*	
25	15/8/79	66°58'N x 95°57'W	20	6			6	1	8						1*
26	15/8/79	66°58'N x 95°46'W	25.5	10			8	2	28			3**	1**		
27	15/8/79	66°56'N x 95°46'W	22	8		8	1								
28	15/8/79	66°58'N x 95°40'W	25	4		6	1					1**			
29	15/8/79	66°57'N x 95°38'W	25	4		9	2								
30	15/8/79	66°57'N x 95°24'W	25	6		3		8							
31	27/8/79	66°04'N x 96°38'W	22		17										
32	27/8/79	66°04'N x 96°37'W	22												
		Total		170	18	80	96	14	47	10	4	35	4	1	5

* Samples from lake trout stomachs.

** Samples from minnow traps.

The largest potential blockage to upstream migration is Sinclair Falls, located on the Back River approximately 320 km upstream of Chantrey Inlet. Lower areas of the Back, especially in the Franklin Lake area, generally produced a greater mass of fish per net than did sets further upstream.

Lake trout are the most frequently encountered and most abundant species present in the Back River. They were taken at every station except the landlocked lakes (sets 31 and 32). Males and females were caught in almost equal numbers. The number of spawners was almost equal to the number of mature non-spawners suggesting that individuals don't spawn every year. Our observations indicate that lake trout in the Back River system probably spawn in September, which is much earlier than southern populations. Spawning occurs over boulder and rubble bottoms in lakes (Scott and Crossman 1973), and probably in the wide and slow sections of the Back River. Fish remains and insect pupae and larvae (Diptera and Trichoptera) comprised the major food items. Crustaceans (Amphipods, Copepods, Notostracans and Isopods) and the occasional small mammal were also utilized.

Lake whitefish and round whitefish are both very abundant in the Back. They were caught in small numbers but equal proportions in Garry Lake. Round whitefish were more abundant and more frequently caught downstream to Franklin Lake. In Franklin Lake both species were very abundant. Our nets also produced a surprisingly large number of lake whitefish in Montresor Lake. Overall, male and female lake whitefish were caught in equal numbers and there were more spawners than mature non-spawners. More female round whitefish were caught than

males, but almost all mature fish were in or entering spawning condition. In this region, both lake whitefish and round whitefish probably spawn in Spetember. Lake whitefish commonly spawn over hard stoney and sand shallows of lakes and round whitefish spawn over gravel shallows of lakes, at river mouths or in rivers (Scott and Crossman 1973). Both species spawn in the Back, the lake whitefish utilizing wide slow areas. From the lake whitefish stomachs sampled, molluscs (Pelecypods and Gastropods) and crustaceans (Copepods, Amphipods and Notostracans) were the most common food item. The round whitefish stomachs sampled most often contained Diptera pupae and larvae.

Arctic cisco inhabit the lower Back, and were encountered as far upstream as Mount Meadowbank. It is unlikely that they are found above Sinclair Falls, located 100 km further upstream. Arctic cisco were not caught in either the Herman or Montresor rivers. They were most abundant in the Back River below Franklin Lake. Males and females were caught in equal numbers. Arctic cisco are anadromous. They ascend rivers in spring and commonly spawn over gravel beds in swiftly flowing water (Scott and Crossman 1973). All but five of the Arctic cisco caught in the Back River in August were ripe spawners, suggesting that spawning activity would probably commence in September. These fish are thought to return to the mouth of the Back and Chantrey Inlet for winter.

Lake cisco and burbot were not caught in large numbers but were found at widespread intervals along the Back. One large catch of lake cisco was recorded below Franklin Lake. They spawn in fall over gravel shallows and most of the specimens caught were in spawning condition. Burbot spawn in midwinter, under the ice.

Except for one large catch in Garry Lake, very few Arctic grayling were encountered. Although this data suggests that grayling are sparsely distributed in the Back itself, they are undoubtedly common in its tributary systems. This species is a spring spawner, and none of those caught were in spawning condition.

Arctic char were encountered at only two of the stations on the Back River. One potentially searun char was cought in Garry Lake. It was not in spawning condition. Seventeen were caught in an apparently landlocked lake downstream of Mount Meadowbank. Most of these char were males and about half of them were ripe. It is interesting to note that all of the char in this catch were from 329 to 395 mm in length and 10 to 15 years old. Searun Arctic char are known to enter the mouth of the Back River in large numbers during early September. It is likely that they migrate upstream as far as Garry Lake and may penetrate inland to Beechey Lake (Johnson, unpublished data).

Ninespine stickleback and slimy sculpin were taken from the stomachs of lake trout from the Back River and in minnow traps set in small tributaries. They are probably widespread and very abundant throughout the entire system.

One fourhorn sculpin was taken from the stomach of a trout from the Back River below Franklin Lake. Fourhorn sculpin are probably common at the mouth of the Back and in Chantrey Inlet.

Crustacean - plankton:

A total of eighteen species of planktonic crustaceans were identified in eleven samples taken from the Back River system (Table 2).

Table 2. Crustacean plankton from the Back River system (individuals per liter).

Location (in Fig. 2)	6				12	13**	24	20	31	32**	%
Date	18/8/79				22/8/79	22/8/79	15/8/79	26/8/79	27/8/79	27/8/79	occur-
Depth (m)	9.0				9.0	1.5	6.0	4.0	4.0	1.5	rence
Copepoda											
Calanoids											64
Diaptomus ashlandi		.01	.02	.02	.04		.30	.12	.45		45
D. minutus		.09	.02	.02	.03		.02			.09	45
D. pribilofensis		<.01	.02	.08	.03					.01	45
Heterocope septentrionalis	.03	<.01	.01	.01				<.01	2.10		45
Diaptomus sicilis		<.01	.02	√							36
Epischura lacustris		<.01	<.01	<.01	.01		<.01	<.01			18
Limnocalanus macrurus											9
Diaptomus oregonensis					.07			.05	10.78*	.01	
Diaptomidae copepodids	.50	.82	.59*	1.01*	.16		.02	.03	2.60		
Diaptomidae nauplii	.05	.10	.08	.04	.14						
Cyclopoida											91
Cyclops scutifer	.63	.63	.20	.87	.07		.07	.03	2.28	<.01	.01	73
C. bicuspidatus thomasi	.53	.18	.22	.24	.57		.03	.13	.45			9
C. agilis (?)											.01
Cyclopidae copepodids			.18	.08	.73	.04	.03	.03	3.40	<.01	.01
Cyclopidae nauplii	1.98	1.89	1.03	2.34	1.37		.30	.17	23.68		

continued ...

Table 2. Continued.

Location (in Fig. 2)	6				12	13**	24	20	31	32**	%
Date	18/8/79				22/8/79	22/8/79	15/8/79	26/8/79	27/8/79	27/8/79	occur-
Depth (m)	9.0				9.0	1.5	6.0	4.0	4.0	1.5	rence
Cladocera											
Daphnia longiremis	.04	.21	.12	.22	.14	.01	.01	.73		.01	82
Holopedium gibberum	.08	.08	.09	.11	.04	.01	.02	.02			73
Chydorus sphaericus	.01		.02	.02		.06	<.01		.01		55
Eubosmina longispina	.01	.03	.02	.04			.01	.01			55
Daphnia middendorffiana	.01	.01	.01	.01						.73	45
Acroperus harpae						.01					9
Bosmina longirostris					<.01						9
Total ind/L	3.87	4.05	2.65	5.11	3.40	0.13	0.81	0.59	46.47	0.02	0.87
Number of species	8	12	13	13	10	5	9	7	5	2	5

* Identifiable as copepodids of *Diaptomus sicilis*.

**Shallow depth or fast current - plankton samples from a horizontal surface drag.

Cyclops scutifer and *Daphnia longiremis* were the most common and are considered typical of lakes in northern Canada (K. Patalas, pers. comm.). *Diaptomus minutus, Diaptomus oregonensis* and *Cyclops bicuspidatus thomasi* are all thought to be at the northern margin of their ranges. *Heterocope septeutrionalis* was found for the first time in the north-eastern part of Canada (Garry Lake; site 32). *Eubosmina longispina* was encountered frequently, although this species is absent from south-central Canada. *Limnocalanus macrurus*, considered one of the most common northern species, was found only in Franklin Lake.

Thirteen species were found in Garry Lake, a relatively high number of species for a northern lake. Overall, abundance in the Back River system was generally low except on the Montresor River (location 20). It was in this same area that largest catch of lake whitefish was obtained (Table 1).

Water chemistry:

Water chemistry data are presented in Table 3. Locations 31 and 32 were in small tundra lakes, dissociated from the Back River, while the other locations were on the river system.

Table 3. Water chemistry data for the Back River System.

Location (in Fig. 2)	6		12	13	24		20	31	32
Date	18/8/79		22/8/79	22/8/79	15/8/79		26/8/79	27/8/79	27/8/79
Time	2100		0900	0900	1200		1345	0930	0930
Light Condition	clear		overcast	overcast	overcast		clear	overcast	overcast
FIELD DATA									
Water Temperature (°C)	7.2		6.0	6.0	7.0		5.0	5.0	3.0
Conductivity (µmhos/cm)	11		-		11		-	-	-
Depth (m)	9.0		9.0	1.5	6.0		4.0	4.0	1.5
Secchi depth (m)	6.0		5.0		6.0		3.0	>4.0	>1.5
Secchi color	clear royal blue		deep green	-	cloudy blue green		pale green	emerald green	pea green
LABORATORY DATA									
Water sample size	4		1	1	2		1	1	1
	mean	range			mean	range			
pH	6.325	6.30 -6.40	6.10	6.00	6.50	6.40 -6.60	5.90	4.50	5.90
Total dissolved nitrogen (µg/L)	292.5	250 - 340	310	270	360	350 - 370	360	220	340
Total dissolved phosphorus (µg/L)	13.8	12 - 15	17	15	38	30 - 46	15	13	15
NUTRIENTS (µg/L)									
Suspended carbon	545	320 - 920	240	220	665	290 - 1040	190	240	440
Suspended nitrogen	52.5	46 - 72	28	30	44.5	29 - 60	58	55	58
Suspended phosphorus	3	2 - 4	5	3	3.5	3 - 4	4	4	8
Chlorophyll A	1.55	1.5 - 1.6	1.8	1.8	1.55	1.5 - 1.6	0.5	1.0	2.0

... continued

Table 3. Continued.

Location (in Fig. 2)	6		12	13	24		20	31	32
Date	18/8/79		22/8/79	22/8/79	15/8/79		26/8/79	27/8/79	27/8/79
Time	2100		0900	0900	1200		1345	0930	0930
Light condition	clear		overcast	overcast	overcast		clear	overcast	overcast
MAJOR IONS (mg/L)									
Sodium	0.605	0.56-0.64	0.71	0.58	0.865	0.90-0.83	3.07	1.10	1.11
Potassium	0.29	0.27-0.31	0.38	0.27	0.445	0.35-0.54	0.54	0.19	0.23
Magnesium	0.625	0.62-0.63	0.62	0.59	0.655	0.65-0.66	1.04	0.29	0.52
Calcium	1.203	1.17-1.26	1.26	1.26	1.26	1.21-1.31	1.54	0.65	1.07
Chloride	0.9	0.8-1.2	0.8	0.8	1.1	1.0-1.2	4.4	1.0	1.0
Sulphate	2.2	1.6-2.4	3.4	2.6	1.2	1.2-1.2	4.8	4.8	3.4

2. RIVER SYSTEMS ENTERING QUEEN MAUD GULF

General:

The rivers emptying into Queen Maud Gulf flow north and drain lands as far as 200 km inland (Fig. 1). Lands directly south of this are drained by the Back River system. Sampling was conducted on six different systems (Fig. 3).

The most westerly system tested drains about 3000 km^2 and originates at a large lake 130 km inland. Immediately east of this, we tested a much smaller system, with a drainage of only 100 km^2.

The Perry is one of the largest rivers entering Queen Maud Gulf and drains a total area of 16,000 km^2, a number of large lakes, the biggest of which is MacAlpine. There is a set of falls 51 km upstream from the mouth of the Perry. The lands upstream of these falls tend to be rolling, whereas the lower section of the Perry flows across flatlands and has very low banks.

The Simpson River, with its large tributary the Kangowan, drains about 14,000 km^2. The lower part of the Simpson flows across flatlands but has relatively steep silt banks. Most of the sampling was done within 10 miles of the mouth, but a large headwater lake 130 km upstream was also tested.

The headwater lakes of the McNaughton and Kaleet river systems were tested. The McNaughton River enters McLoughlin Bay and drains an area of approximately 4000 km^2. The Kaleet River enters Sherman Basin and drains an area of about 3000 km^2. No discharge data is available for any of the systems.

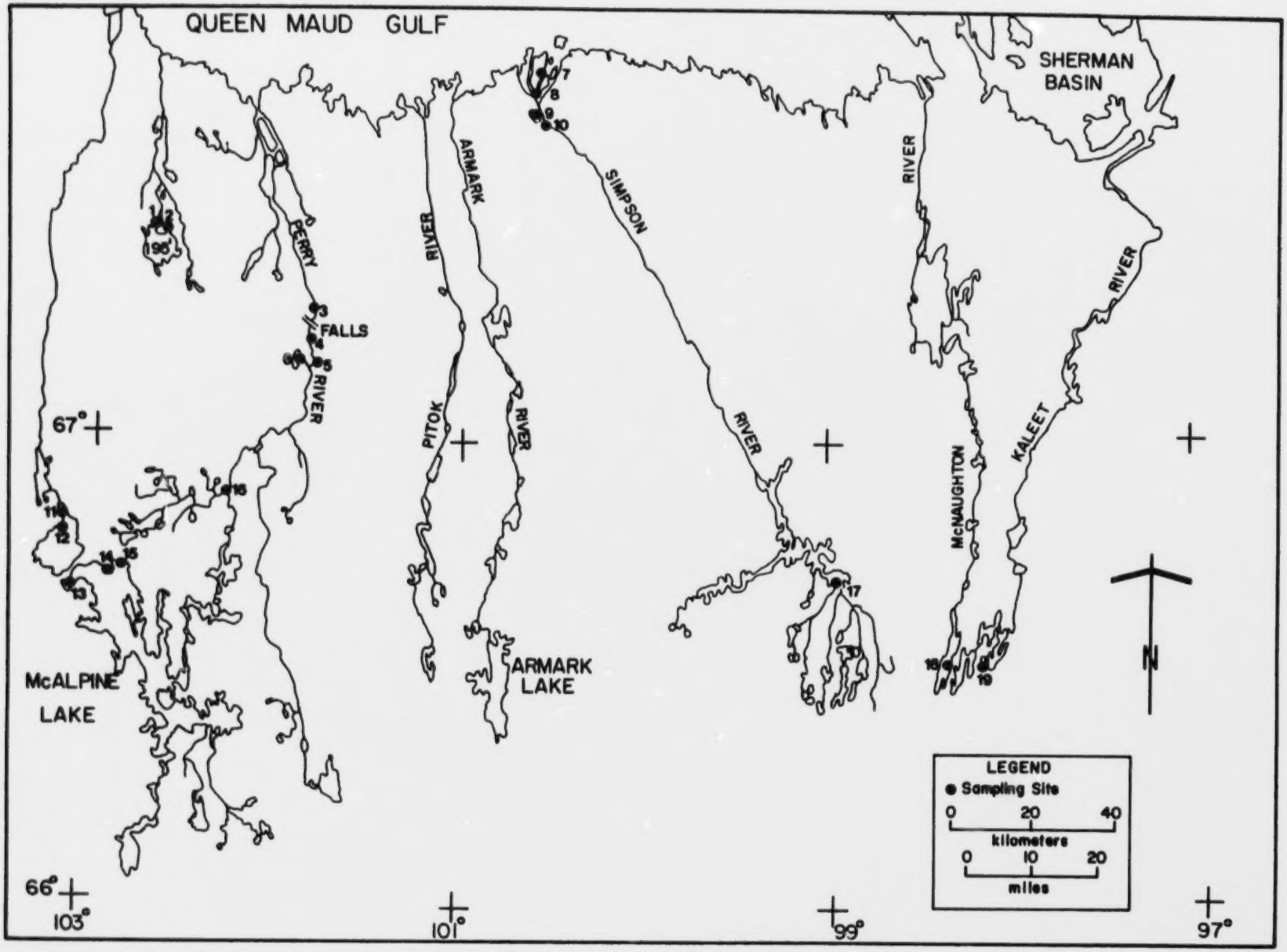

Fig. 3. The rivers entering Queen Maud Gulf showing sampling locations.

Fish Resources:

Nineteen nets were set in the river systems emptying into Queen Maud Gulf. All sampling was conducted between August 22 and 26, 1979. Sampling locations are presented in Fig. 3 and species distribution data by sampling location is in Table 4. Sampling locations 1 to 10 are within 75 km of the coast and locations 11 to 19 are further inland. Appendix 1 shows species distribution for the study area, combining both ALUR sampling data and data from other sources. Raw data is presented in Appendix 4.

The falls on the Perry undoubtedly present a blockage to upstream migrations. No fish were caught in set 9, which was in a shallow lake connected to the Simpson River by an intermittent stream. No fish were caught in the set on the Kaleet River either.

Lake trout were the most frequently encountered and most abundant species. Generally, they were more abundant in headwater areas than near the coast. The number of spawners was less than one half the number of mature non-spawners. Spawning probably occurs in September. Fish remains comprised the major food item. Trichoptera and one small mammal were also taken from trout stomachs.

Lake whitefish were also fairly abundant and frequently encountered. As with lake trout, they were more abundant in the headwater lakes than near the coast. Males and females were caught in equal numbers. Most of the mature individuals were in or near spawning condition.

Round whitefish and lake cisco were encountered in both the upper and lower Perry. All of the mature round whitefish caught were in spawning condition.

Table 4. Species distribution by sampling site for rivers entering Queen Maud Gulf.

Set	Date	Location	Duration (hrs)	Species and Numbers Caught															
				Lake trout	Arctic char	Lake whitefish	Round whitefish	Lake cisco	Least cisco	Arctic cisco	Arctic grayling	Longnose sucker	Burbot	Ninespine stickleback	Fourhorn sculpin	Arctic flounder	Toothed cod	Saffron cod
1	23/8/79	67°27'N x 102°43'W	14	5														
2	23/8/79	67°26'N x 102°42'W	14	6		7	2	5										
3	23/8/79	67°13'N x 101°51'W	14	6		2		1				6						
4	23/8/79	67°12'N x 101°51'W	14									1						
5	23/8/79	67°10'N x 101°51'W	14	3				1				3						
6	23/8/79	67°10'N x 101°55'W	14								3			1				
7	25/8/79	67°48'N x 100°37'W	14						1						190	7	4	1
8	25/8/79	67°45'N x 100°38'W	14	4		1			2	9					34	4		1
9	25/8/79	67°42'N x 100°38'W	14							2					1			
10	25/8/79	67°42'N x 100°36'W	14	1									1					
11	24/8/79	66°49'N x 103°10'W	17	5		11		2										
12	24/8/79	66°43'N x 103°10'W	17	7		7		3										
13	24/8/79	66°46'N x 103°07'W	16.5				19											
14	24/8/79	66°46'N x 102°58'W	16.5	1														
15	24/8/79	66°37'N x 102°51'W	16	9		2		1										
16	24/8/79	66°52'N x 102°17'W	16	13		4						7	2	1*				
17	26/8/79	66°42'N x 98°58'W	16.5		1	1			12									
18	26/8/79	66°32'N x 98°23'W	16.5	10		4												
19	26/8/79	66°32'N x 98°12'W	16.5															
		Total		70	1	39	21	13	15	11	3	17	3	2	225	11	4	2

* Sample from lake trout stomach.

Least cisco were found in both the upper and lower Simpson. Round whitefish, lake cisco and least cisco are probably widespread throughout the rivers in this area.

Arctic cisco were present in the lower Simpson. This species is likely widespread in Queen Maud Gulf and in the lower reaches of rivers draining into it. The specimens taken at the mouth of the Simpson River were either immature or in spawning condition.

Other freshwater species commonly occurring in these rivers are Arctic grayling, longnose sucker, burbot, and ninespine stickleback. Due to the limited nature of this study, only a few representatives of each of these species were obtained.

Marine species commonly found in the gulf and at the river mouths are fourhorn sculpin, Arctic flounder, toothed cod and saffron cod.

Crustacean - plankton:

Samples were taken from eleven locations on the systems draining to Queen Maud Gulf (Table 5). A total of sixteen species were encountered.

Daphnia logiremis, *Diaptomus ashlandi* and *Diaptomus sicilis* were the species most frequently encountered and are considered typical of northern Canadian lakes (K. Patalas, pers. comm.). Species thought to be at the northern margin of their ranges include *Diaptomus minutus* and *Cyclops bicuspidatus thomasi*. A rare species, *Eurytemora canadensis*, was present in the Simpson River system. *Limnocalanus macrurus*, considered one of the most common species of the north, was found only in a small unnamed lake near the coast (location 1).

The greatest number of species was seven, found at location 14, in

Table 5. Crustacean-plankton from the rivers entering Queen Maud Gulf (individuals per liter)

Location (in Fig. 3)	1	3	7**	11**	14	16**	17	18	19	%
Date	23/8/79	23/8/79	25/8/79	24/8/79	24/8/79	24/8/79	26/8/79	26/8/79	26/8/79	occur-
Depth (m)	9.0	4.5	1.0	1.5	8.5	4.0	3.0	3.5	4.0	rence
Copepoda										
Calanoids										27
Diaptomus ashlandi	.05	.03			.04					27
D. sicilis					.35		.03			18
Limnocalanus macrurus	.06	.08								9
Eurytemora canadensis							.01			9
Diaptomus minutus				.01						9
D. arcticus							< .01			
Diaptomidae copepodids	2.43	1.80	.07	.01	2.99		.01			
Diaptomidae nauplii	1.01	.85			.11					
Cyclopoida										
Cyclops bicuspidatus thomasi				.06				.26		18
C. scutifer			.06		.02				.05	18
C. vernalis	< .01							8.37*	1.00	18
Cyclopidae copepodids	.12	.13	.03	5.60	9.41				7.05	
Cyclopidae nauplii	.06	.05		11.87	.46					

continued ...

Table 5. Continued.

Location (in Fig. 3)	1		3		7**	11**	14	16**	17	18	19	%
Date	23/8/79		23/8/79		25/8/79	24/8/79	24/8/79	24/8/79	26/8/79	26/8/79	26/8/79	occur-
Depth (m)	9.0		4.5		1.0	1.5	8.5	4.0	3.0	3.5	4.0	rence
Cladocera												
Daphnia longiremis					.03	0.6	.77		.03	.01	5.67	55
Holopedium gibberum						.06	<.01					18
Bosmina longirostris						1.13						9
Branchinecta palludosa											.55	9
Macrotrix hirsuticornis											.05	9
Eubosmina longispina							.04					9
Daphnia middendorffiana							<.01					9
Total ind/L	3.73	2.94	0.00	0.00	0.19	19.34	14.19	0.00	0.08	8.64	14.37	
Number of species	3	2			2	5	7		4	3	4	

* Identifiable as copepodids of *Diaptomus sicilis*.

** Shallow depth or fast current - plankton samples from a horizontal surface drag.

MacAlpine Lake. Samples from the Perry River (locations 3 and 16), which drains MacAlpine Lake, contained no planktonic crustaceans.

Water chemistry:

Water chemistry data are presented in Table 6.

Table 6. Water chemistry data for the rivers entering Queen Maud Gulf.

Location (in Fig. 3)	1		3		7	11	14	16	17	18	19
Date	23/8/79		23/8/79		25/8/79	24/8/79	24/8/79	24/8/79	26/8/79	26/8/79	26/8/79
Time	1000		1030		1600	1900	1920	1920	1300	1315	1330
Light condition	overcast		overcast		overcast	overcast	overcast	overcast	clear	clear	clear
FIELD DATA											
Water Temperature (°C)	6.8		8.8		-	-	7.8	8.2	5.0	5.5	5.0
Conductivity (µmhos/cm)	2.5		9		-	-	12	14	-	-	-
Depth (m)	9.0		4.5		1.0	1.5	8.5	4.0	3.0	3.5	4.0
Secchi depth (m)	5.5		0.5		0.2	0.6	>8.5	0.5	0.1	0.2	0.15
Secchi color	light green		cloudy light green		creamy beige	cloudy light green	clear green	cloudy light green	creamy beige	creamy brown	creamy brown
LABORATORY DATA											
Water sample size	2		2		1	1	1	1	1	1	1
	mean	range	mean	range							
pH	6.35	6.30-6.40	6.00	5.60-6.40	6.00	5.90	5.90	5.80	6.00	6.30	6.20
Total dissolved nitrogen (µg/L)	225	220 - 230	245	200 - 290	410	280	180	210	410	300	390
Total dissolved phosphorus (µg/L)	14	14 - 14	16.5	16 - 17	30	16	14	17	54	18	23
NUTRIENTS (µg/L)											
Suspended carbon	570	100 - 1040	435	280 - 590	760	340	220	320	340	340	440
Suspended nitrogen	40	37 - 43	30	25 - 35	123	53	28	33	60	78	71
Suspended phosphorus	3	3 - 3	13.5	13 - 14	60	8	4	10	148	27	42
Chlorophyll A	1.4	1.4 - 1.4	1.5	1.4 - 1.6	3.4	1.8	0.7	1.2	11.4	2.3	2.6
MAJOR IONS (mg/L)											
Sodium	4.185	4.13-4.24	1.735	1.71-1.76	385	4.93	0.88	1.28	16.1	3.15	3.03
Potassium	0.51	0.50-0.52	0.34	0.33-0.35	14.7	0.63	0.21	0.29	2.82	0.48	0.77
Magnesium	0.985	0.98-0.99	0.61	0.61-0.61	48.0	1.26	0.49	0.52	3.34	0.75	1.69
Calcium	1.17	1.17-1.17	0.75	0.75-0.75	19.4	1.21	0.75	0.75	2.15	0.98	1.49
Chloride	7.6	7.2 - 8.0	2.7	2.4 - 3.0	730	9.4	2.0	2.0	24.4	5.2	6.2
Sulphate	1.3	0.8 - 1.8	1.7	0.8 - 2.6	92.0	0.8	0.6	1.6	2.4	1.4	1.4

3. THE THELON RIVER

General:

The Thelon River lies in the south-western section of the study area (Fig. 1). It originates at Whitefish Lake (elevation 361 m) and flows north and then east, finally emptying into the west end of Baker Lake. In all the Thelon flows 675 km and drains 100,000 km^2 of barrens. Our study area included only the lower half of the Thelon.

Stands of black spruce occur sporadically along the shores of the Thelon from its confluence with the Hanbury River downstream to Beverly Lake. The river bottom along this section of the river is usually gravel, with numerous shallows and sand bars. The low sand and gravel banks are surrounded by rolling hills and eskers. This section of the Thelon has very clear water.

The maximum daily discharge of the Thelon, as measured at the Water Survey of Canada station ($64^{\circ}32'N \times 101^{\circ}23'W$)(Fig. 1) in 1978, was 1610 m^3/s (on June 30). The highest mean monthly flow in 1978 occurred in July at 1040 m^3/s and the lowest was 7 m^3/s occurring during late February and March (Inland Waters Directorate 1979).

Fish Resources:

Six nets were set in the Thelon River between August 29 and 31, 1979. Sampling locations are presented in Fig. 4 and species distribution data by sampling location is in Table 7. Appendix 1 shows species distribution for the study area, combining both ALUR sampling data and data from other sources. Raw data are presented in Appendix 4.

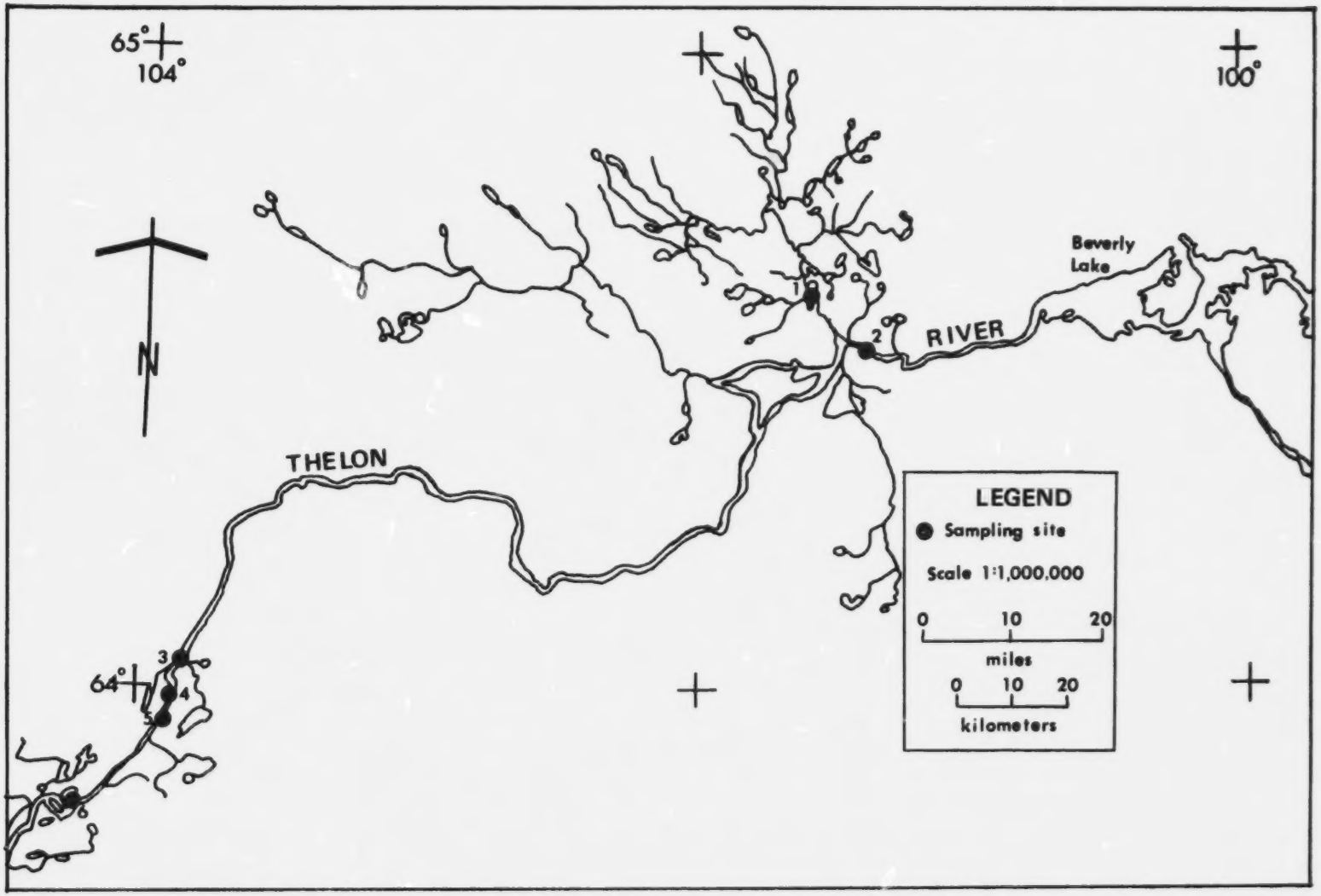

Fig. 4. The Thelon River showing sampling locations.

Table 7. Species distribution by sampling site for the Thelon River.

Set	Date	Location	Duration (hrs)	Species and Number Caught								
				Lake trout	Lake whitefish	Round whitefish	Lake cisco	Arctic grayling	Northern pike	Longnose sucker	Ninespine sitckleback	Slimy sculpin
1	30/8/79	64°37'N x 101°36'W	35	3	6	2					1*	
2	30/8/79	64°32'N x 101°25'W	35	2	4					1		
3	31/8/79	64°02'N x 103°51'W	15			2		1				
4	31/8/79	63°58'N x 103°53'W	14.5	6	6	8				8		
5	31/8/79	63°57'N x 103°54'W	13.5	1	7				2			
6	31/8/79	63°47'N x 104°11'W	13	1	9		1	2	1			1
		Total		13	32	12	1	3	3	9	1	1

* Sample from lake trout stomach.

Lake trout and lake whitefish were the most frequently encountered species present in the Thelon River during our study. Of these, lake whitefish were the most abundant. We caught nearly twice as many male lake whitefish as females and a greater proportion of males were in spawning condition. Male and female lake trout were caught in equal numbers. Lake trout stomachs contained mainly fish remains.

Male and female round whitefish were caught in equal numbers. Other species present include longnose sucker, Arctic grayling, northern pike, lake cisco, ninespine stickleback and slimy sculpin.

Crustacean - plankton:

Plankton were collected at four locations along the Thelon River. A total of twelve species were encountered. *Diaptomus sicilis, Cyclops scutifer* and *Daphnia longiremis* were the most frequently encountered species, and are considered to be typical of lakes in northern Canada.

Data are presented in Table 8.

Water chemistry:

Water chemistry data are presented in Table 9.

Table 8. Crustacean-plankton from the Thelon River (individuals per liter).

Location (in Fig. 4)	3	4		5	
Date	31/8/79	31/8/79		31/8/79	% occurrence
Depth (m)	2.5	8.0		2.5	
Copepoda					
Calanoids					
Diaptomus sicilis		<.01		.01	50
D. minutus	11.72				25
Epischura lacustris	.36				25
Diaptomus pribilofensis			<.01		25
D. ashlandi				<.01	25
Diaptomidae copepodids	2.92	<.01		3.76	
Diaptomidae nauplii		.03			
Cyclopoida					
Cyclops scutifer	.88	<.01		.01	75
C. bicuspidatus thomasi	1.80				25
Cyclopidae copepodids	.88	<.01	<.01	.07	
Cyclopidae nauplii	23.64	.08		.32	
Cladocera					
Daphnia longiremis	4.72			.01	50
Bosmina longirostris	1.60				25
Chydorus sphaericus				.04	25
Daphnia middendorffiana	<.01				25
Eubosmina longispina		<.01			25
Total ind/L	48.52	0.11	<0.01	4.22	
Number of species	7	3	1	5	

Table 9. Water chemistry data for the Thelon River.

Location (in Fig. 5)	3	4		5
Date	31/8/79	31/8/79		31/8/79
Time	0945	0940		0930
Light condition	overcast	overcast		overcast
FIELD DATA				
Water Temperature (°C)	6.9	6.9		7.5
Conductivity (µhmos)	-	-		-
Depth (m)	2.5	8.0		2.5
Secchi depth (m)	>2.5	5.5		>2.5
Secchi color	clear forest green	clear forest green		deep blue green
LABORATORY DATA				
Water sample size	1	2		1
		mean	range	
pH	6.20	6.20	6.20-6.20	6.00
Total dissolved nitrogen (µg/L)	260	305	290 - 320	310
Total dissolved phosphorus (µg/L)	10	11	9 - 13	7
NUTRIENTS (µg/L)				
Suspended carbon	330	300	290 - 310	420
Suspended nitrogen	53	53	38 - 68	68
Suspended phosphorus	4	5.5	5 - 6	10
Chlorophyll A	2.2	1.95	1.9 - 2.0	3.0
MAJOR IONS (mg/L)				
Sodium	0.72	0.74	0.61-0.87	0.80
Potassium	0.33	0.32	0.31-0.33	0.36
Magnesium	0.64	0.65	0.64-0.66	0.77
Calcium	1.59	1.585	1.54-1.63	1.77
Chloride	1.6	1.6	1.6 - 1.6	1.8
Sulphate	1.0	1.1	1.0 - 1.2	1.4

4. THE QUOICH RIVER

General:

The Quoich River originates west of Wager Bay and flows in a southerly direction for 310 km and empties into the north-west end of Chesterfield Inlet. It drains 30,000 km^2 of barrens, including Tehek Lake, located 60 km north of Baker Lake. St. Clair Falls, located near the mouth of the Quoich, is probably a blockage to upstream fish migrations.

The maximum daily discharge of the Quoich as measured at the Water Survey of Canada station ($64^{o}27'N \times 94^{o}07'W$)(Fig. 1) in 1978, was 1669 m^3/s (on July 9). The highest mean monthly flow occurred in July at 1087 m^3/s and the lowest was 0.8 m^3/s occurring during both February and March (Inland Waters Directorate 1979).

Fish Resources:

Six nets were set in the Quoich River between August 20 and 21, 1979. Sampling locations are presented in Fig. 5 and species distribution data by sampling location is in Table 10. Appendix 1 shows species distribution for the study area, combining both ALUR sampling data and data from other sources. Raw data are presented in Appendix 4.

Lake trout and round whitefish were the most frequently encountered species present in the Quoich River during our study. Of these, lake trout were the most abundant. Males and females were caught in equal numbers, but only a few individuals were in spawning condition. Stomach contents were most often comprised of fish remains. Insect pupae and larvae (Diptera and Trichoptera) and the occasional Pelecypod and small

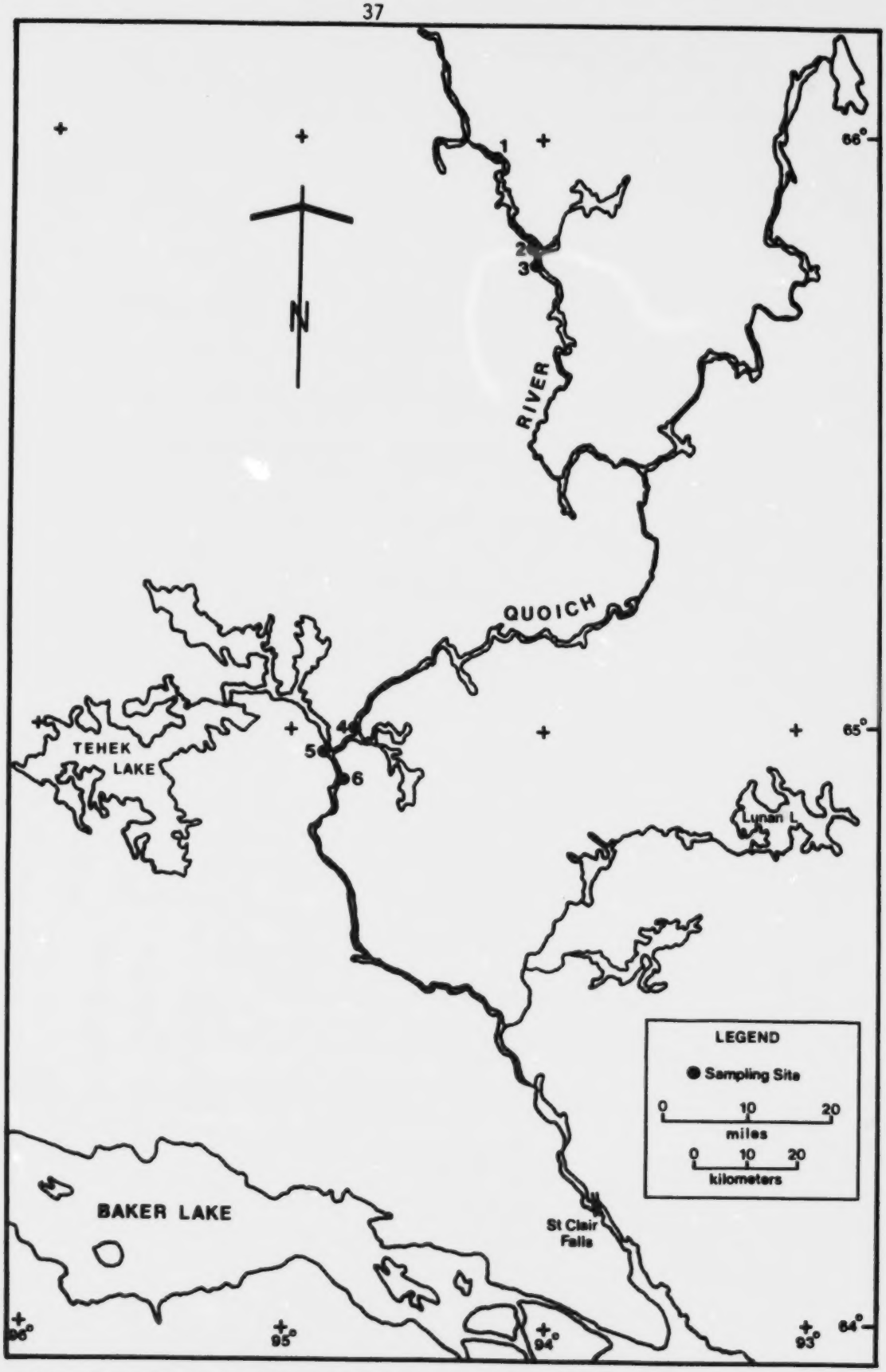

Fig. 5. The Quoich River showing sampling locations.

Table 10. Species distribution by sampling site for the Quoich River.

Set	Date	Location	Duration	Species and Numbers Caught					
				Lake trout	Arctic char	Round whitefish	Arctic grayling	Slimy sculpin	Sculpin species
1	21/8/79	65°58'N x 94°11'W	53	11		8			2
2	21/8/79	65°48'N x 94°02'W	53	6	1	2			
3	21/8/79	65°47'N x 94°00'W	53	10		6			1
4	21/8/79	65°02.5Nx 94°42'W	46.5	21		1	2	9	
5	21/8/79	64°50'N x 94°51'W	45	17		4			
6	21/8/79	64°56'N x 94°48'W	45	15		1			
		Total		80	1	22	2	9	3

mammal were also found. More female round whitefish were caught than males, but most of the fish were in spawning condition.

Other species encountered include Arctic grayling, Arctic char and slimy sculpin. The Arctic char was probably landlocked.

Crustacean - plankton:

A sample was taken on August 21, 1979 at the junction of the Quoich and Tehert rivers (location 5 in Fig. 5). The sample was taken below a rapids in 4.5 m of water and contained no planktonic crustaceans.

Water chemistry:

Water chemistry data are presented in Table 11.

Table 11. Water chemistry data for the Quoich River.

Location (in Fig. 4)	5	
Date	21/8/79	
Light condition	overcast	
FIELD DATA		
Water Temperature (°C)	8.5	
Conductivity (µmhos)	8	
Depth (m)	4.5	
Secchi depth (m)	>4.5	
Secchi color	light green	
LABORATORY DATA		
Water sample size	4	
	mean	range
pH	6.35	6.30 - 6.40
Total dissolved nitrogen (µg/L)	202.5	180 - 240
Total dissolved phosphorus (µg/L)	15	13 - 18
NUTRIENTS (µg/L)		
Suspended carbon	407.5	120 - 800
Suspended nitrogen	-23.3	<3 - 49
Suspended phosphorus	-	<1 - 2
Chlorophyll A	0.48	0.4 - 0.5
MAJOR IONS (mg/L)		
Sodium	0.672	0.61 - 0.75
Potassium	0.22	0.21 - 0.25
Magnesium	0.247	0.24 - 0.25
Calcium	0.70	0.70 - 0.70
Chloride	0.8	0.8 - 0.8
Sulphate	1.05	0.8 - 1.4

APPENDIX I

FISH SPECIES DISTRIBUTION MAPS

Species reports for the 1979 study area have been compiled and placed on distribution maps. The sampling locations and boundaries of the 1979 survey are shown in Figure 6. Each of the following distribution maps (Fig. 7 to 21) have species report locations marked by either a solid dot or a number. Solid circles (●), solid triangles (▲), and solid squares (■) refer respectively to the 1979, 1978 (MacDonald and Fudge 1979) and 1977 (Stewart and MacDonald 1978) Arctic Land Use Research surveys. Data collected by other surveys are indicated by numbers in boxes, each representing a species occurrence reference. To avoid repetition, only the first report of a species presence in an area is referenced.

DISTRIBUTION OF LAKE TROUT, *Salvelinus namaycush* Walbaum (Fig. 7)

Lake trout were the most frequently encountered species during the 1979 field survey. They have been found in every drainage system which has been studied in the area.

The 5th Thule Expedition reported catching lake trout in Baker Lake (1; Pflaff 1937) and Clarke (1940), during a biological investigation of the Thelon Game Preserve, caught lake trout at Hornby's cabin (2) and in the Thelon River between Beverly and Aberdeen lakes (3). Sprules (1952) reported lake trout in the Wilson River (4) and Whiterock Lake (5). Data from the 1959 Barren Grounds Survey, discussed by Johnson (1976), indicate lake trout catches in Meliadine (6), Maze (7), Dubawnt (8). MacDougall (9), Beverly (10), and Maguse (11) lakes. Brack et al. (1963) found lake trout in the Meliadine River (12) and in Barbour Bay (13) on

Chesterfield Inlet. Lake trout have also been caught in Kaminuriak (14; Bond 1975), Nanau (15), Schultz (16), and Thirty Mile (17) lakes and in the Thelon (18), Meadowbank (19), and Kazan (20) rivers (McLeod et al. 1976). Two pipeline impact surveys of the District of Keewatin reported that lake trout occurred in Whitehills (21), Pitz (22), and Forde (23) lakes, in the Murchison River (24) (Lawrence et al. 1977), and in the Hayes (25), Herman (26), Prince (27), Akutuak (28), and Bunker (29) rivers (Hatfield et al. 1977). Fisheries management trapping and test netting operations between 1974 and 1976 captured lake trout in Diana Lake and River (30) and near Sandy Point (31) on the west coast of Hudson Bay (R. Peet, pers. comm.). Residents of Chesterfield Inlet catch lake trout in many of the lakes and rivers (32) flowing into the inlet near the community during both the summer and winter (H. Welch, pers. comm.).

DISTRIBUTION OF ARCTIC CHAR, *Salvelinus alpinus* (Linnaeus)(Fig. 8)

Arctic char exist in both searun (anadromous) and inland non migratory populations.

Anadromous char migrate downstream to the sea in spring and return upstream in fall to spawn and overwinter in freshwater lakes. The degree of utilization of coastal rivers and streams is determined by the availability of suitable migration routes and spawning grounds. Known barriers to anadromous char migration include Kazan Falls on the Kazan River, the falls on the Perry River and probably St. Clair Falls on the Quoich River.

Although there are no known barriers, Arctic char have not been captured upstream of Beverly Lake on the Thelon.

Non migratory Arctic char are usually found in systems that are isolated from the sea. Our data suggests that the upper Quoich contains such a population.

Lakes containing Arctic char are: Baker (1; Pflaff 1937), Whiterock (2), Littlefish (3; Sprules 1952), Peter (4; Johnson, unpublished data), Armit (5), Beverly (6), Beechey (7; McPhail 1961), MacDougall (8), Aberdeen (9), Dubawnt (10; Kahn and Qadri 1971), Maze (11), Maguse (12; Johnson 1976), Whitehills (13; Lawrence et al. 1977) and Meliadine (14; R. Peet, pers. comm.).

Clarke (1940) caught Arctic char in the river between Aberdeen and Schultz lakes (15). There are also Arctic char in the Wilson (16; Sprules 1952), Meliadine (17; Brack et al. 1963), Thelon (18; McLeod et al. 1976), Murchison (19; Lawrence et al. 1977), Hayes (20), Prince (21) and Herman (22; Hatfield et al. 1977) rivers.

Most of the brackish and salt water bays along Queen Maud Gulf, Hudson Bay and Chesterfield Inlet contain Arctic char populations. These areas are often fished domestically or commercially.

DISTRIBUTION OF LAKE WHITEFISH, *Coregonus clupeaformis* (Mitchill)(Fig. 9)

The only areas from which lake whitefish have not been reported are the Quoich River and other rivers draining into the north side of Chesterfield Inlet. Otherwise lake whitefish are distributed throughout the study area.

Lake whitefish have been caught in Dubawnt (1; Tyrell 1896), Baker (2), Aberdeen (3; Critchell-Bullock 1931), Maguse (4), MacDougall (5), Beverly (6; Johnson 1976), Kaminuriak (7; Bond 1975), Whitehills (8),

Pitz (9), Thirty Mile (10) and Forde (11) lakes (Lawrence et al. 1977). They have also been reported to occur in the Thelon (12), Hayes (13; Hatfield et al. 1977) and Murchison (14) rivers (Lawrence et al 1977). Along the Hudson Bay coast, Diana Lake (15) and Sandy Point (16) both support lake whitefish populations (R. Peet, pers. comm.). Yathkyed Lake (17; Johnson, unpublished data) also contains lake whitefish.

DISTRIBUTION OF ROUND WHITEFISH, *Prosopium cylindraceum* (Pallas)(Fig. 10)

Round whitefish are distributed throughout the survey area. They have been captured in Baker (1; Clarke 1940), Whitefock (2; Sprules 1952), Maze (3), Dubawnt (4), Maguse (5), MacDougall (6), Beverly (7; Johnson 1976), Whitehills (8), Pitz (9), Thirty Mile (10) and Forde (11) lakes (Lawrence et al. 1977). Rivers reported to contain round whitefish are the Thelon - between Beverly and Aberdeen lakes (12; Clarke 1940), Wilson (13; Sprules 1952), the Lower Thelon (14; McLeod et al. 1976), Murchison (15), Maguse (16; Lawrence et al. 1977), Hayes (17), Herman (18), Meadowbank (19), Prince (20), Akutuak (21), Bunker (22), Kazan (23; Hatfield et al. 1977), Meliadine (24) and Diana (R. Peet, pers. comm.).

DISTRIBUTION OF LAKE CISCO, *Coregonus artedii* LeSueur (Fig. 11)

There are no reports of lake cisco in the Quoich or any other river systems draining into the north and south sides of Chesterfield Inlet.

Lake cisco have been captured in Schultz (1; Critchell-Bullock 1931), Baker (2; Clarke 1940), Whiterock (3; Sprules 1952), Dubawnt (4), Maguse (5), Beverly (6; Johnson 1976), Thirty Mile (7; McLeod et al. 1976), Whitehills (8), Pitz (9), and Forde (10; Lawrence et al. 1977) lakes.

They have also been reported to occur in the Thelon River between Beverly and Aberdeen lakes (11; Clarke 1940), and in the Wilson (12; Sprules 1952), Lower Thelon (13; McLeod et al. 1976), Maguse (14), Murchison (15; Lawrence et al. 1977) and Bunker (16; Hatfield et al. 1977) rivers. The lakes near Sandy Point (17) also support lake cisco (R. Peet, pers. comm.). The 1959 Barren Ground Lakes Survey caught lake cisco in MacDougall Lake (18; Johnson, unpublished data).

Lawrence and Davies (in prep.) have reported the presence of blackfin cisco (*Coregonus nigripinnis* Gill) in both Pitz and Thirty Mile lakes. However this species may be taxonomically inseparable from *Coregonus artedii* as defined by some authors, thus it has not been given a separate distribution map.

DISTRIBUTION OF LEAST CISCO, *Coregonus sardinella* Valenciennes (Fig. 12)

During the 1979 fish survey, least cisco were captured only in the Simpson River. They have also been reported to occur in the Murchison River (1; Lawrence et al. 1977) and in the vicinity of the Perry River (2; Scott and Crossman 1973).

DISTRIBUTION OF ARCTIC CISCO, *Coregonus autumnalis* (Pallas) (Fig. 13)

Arctic cisco are distributed along the Arctic coast of North America from Alaska to Chantrey Inlet. They have also been reported in Maze Lake(1) on the Wilson River system and in Meliadine Lake (2) on the Meliadine River system, both emptying into Hudson Bay from the west (Johnson 1976). On the Arctic coast, Arctic cisco have been captured in the Murchison River (3; Lawrence et al. 1977) and in the Back and Simpson river systems.

DISTRIBUTION OF ARCTIC GRAYLING, *Thymallus arcticus* (Pallas)(Fig. 14)

Arctic grayling have not been reported from the Murchison and Hayes rivers, flowing into the east side of Chantrey Inlet, and the rivers east of the Quoich draining into Chesterfield Inlet from the north. No Arctic grayling were captured during two seasons of intensive test netting on the Murchison River (Lawrence and Davies in prep.) or during a widespread survey of the Hayes River (Hatfield et al. 1977). Residents of Chesterfield Inlet indicate that Arctic grayling do not occur in the rivers near the community which flow into the north side of the Inlet (H. Welch, pers. comm.).

Lakes where Arctic grayling have been captured are: Baker (1; Pflaff 1937), Whiterock (2; Sprules 1952), Meliadine (3), Maze (4), Dubawnt (5), MacDougall (6; McCart and Pepper 1971), Beverly (7; Johnson 1976), Thirty Mile (8; McLeod et al. 1976), Whitehills (9; Lawrence et al. 1977), Diana (10) and the lakes near Sandy Point (11; R. Peet, pers. comm.). There are also reports of Arctic grayling occurring in the Wilson (12; Sprules 1952), Meliadine (13; Brack et al. 1963), Thelon (14), Denise (15), Kazan (16; McLeod et al. 1976), Maguse (17; Lawrence et al. 1977), Herman (18), Meadowbank (19), Prince (20), Akutuak (21), Bunker (22; Hatfield et al. 1977) and Diana rivers (23; R. Peet, pers. comm.).

DISTRIBUTION OF NORTHERN PIKE, *Esox lucius* Linnaeus (Fig. 15)

The northern limit of northern pike distribution lies just inside the southern boundaries of the 1979 study area. The only system north of the Thelon River and Baker Lake to contain northern pike is the Baillie River, a tributary of the Back. Pike range does not appear to

extend into Garry Lake and there are no reports of northern pike in any of the Queen Maud Gulf or Chantrey Inlet drainages. Similarly, no northern pike have been captured in the Quoich or other rivers draining directly into Chesterfield Inlet from either the north or the south.

Tyrell (1896) caught northern pike in the Dubawnt (1) and Kazan (2) rivers and Johnson (1976) reported catching northern pike in Maguse (3) and Beverly (4) lakes during the 1959 Barren Grounds Survey. Both Lawrence et al. (1977) and Hatfield et al. (1977) found northern pike in the Maguse River system (5) and Johnson (unpublished data) also reports them in Yathkyed Lake (6).

DISTRIBUTION OF LONGNOSE SUCKER, *Catostomus catostomus* (Forster)(Fig. 16)

The north eastern distribution limits of the longnose sucker fall within the 1979 survey area. Longnose sucker are absent from river systems north of the Thelon River and Chesterfield Inlet and east of Pelly Lake on the Back River.

In addition to reports by the ALUR surveys, longnose suckers have been captured in Dubawnt (1), Maguse (2), Beverly (3; Johnson 1976), Baker (4; McLeod et al. 1976), Thirty Mile (5) and Forde (6; Lawrence et al. 1977) lakes. The Thelon (7; McLeod et al. 1976) and Maguse (8; Lawrence et al. 1977) rivers also contain longnose suckers. McPhail and Lindsey (1970) indicate the presence of longnose sucker in both MacAlpine (9) and Pelly (10) lakes.

DISTRIBUTION OF BURBOT, *Lota lota* (Linnaeus)(Fig. 17)

Burbot are present throughout most of the 1979 survey area in low

concentrations. Intensive test netting over a two year period failed to catch burbot in the Murchison River (Lawrence and Davies in prep.). While burbot have not been reported to inhabit the Hayes and Quoich rivers, they may be present in limited numbers and fishing efforts may have been insufficient to detect their presence.

Burbot have been captured at Hornby's cabin on the Thelon River (1; Christian 1937), in Baker Lake (2; McLeod et al. 1976), Maze (3) and Dubawnt (4) lakes (Johnson 1976), Pitz Lake (5), the Maguse River (6; Lawrence et al. 1977), and Diana Lake and River (7; R. Peet, pers. comm.). Welch (pers. comm.) reports that burbot occur in many of the small rivers entering Chesterfield Inlet from the north (8), near the community of Chesterfield Inlet. The 1959 Barren Grounds Survey caught a burbot in Maguse Lake (9; Johnson, unpublished data).

DISTRIBUTION OF NINESPINE STICKLEBACK, *Pungitius pungitius* (Linnaeus)(Fig. 18)

Ninespine stickleback are distributed throughout the 1979 study area. They have been caught in Baker Lake (1; Clarke 1940), the Wilson River (2; Sprules 1952) and in Meliadine (3), Armit (4), Maze (5), Maguse (6), Dubawnt (7), Beverly (8) and MacDougall (9) lakes (McPhail 1963). McLeod reported catching stickleback in Nanau (10) and Schultz (11) lakes, and in the Bunker (12) and Pitz (13) rivers. Lawrence and Davies (in prep.) captured ninespine stickleback at numerous locations on the Murchison River system (14) and Hatfield et al. (1977) caught ninespine stickleback in the Mistake (15, Akutuak (16) and Ferguson (17) rivers.

DISTRIBUTION OF SLIMY SCULPIN, *Cottus cognatus* Richardson (Fig. 19)

Slimy sculpin are probably distributed throughout the 1979 survey area. They have been caught in Baker Lake (1; Christian 1937), Thirty Mile Lake (2), and in the Meadowbank (3) and Thelon (4) rivers (McLeod et al. 1976). Lawrence and Davies (in prep.) found slimy sculpin in Pitz Lake (5) and the Murchison River (6). Slimy sculpin are also reported to occur in the Ellice River (7; McPhail and Lindsey 1970) and in the rivers and lakes north of Chesterfield Inlet near the community of Chesterfield Inlet (8; Welch, pers. comm.).

REPORTS OF THREESPINE STICKLEBACK *Gasterosteus aculeatus* Linnaeus, SPOONHEAD SCULPIN *Cottus ricei* (Nelson), and LAKE CHUB *Couesius plumbeus* (Agassiz)(Fig. 20)

None of these species were caught during the 1979 fish survey. However, all have been reported in or near the study area. Threespine stickleback occur in Littlefish Lake (1; Sprules 1952), Kaminuriak Lake (2), Kaminak Lake (3) and in the Ferguson (4) and Maguse (5) rivers (MacDonald and Fudge 1979). Spoonhead sculpins are reported to be present in Dubawnt (6), Beverly (7; Scott and Crossman 1973) and Pitz (8) lakes (Lawrence et al. 1977). Lake chub distribution parallels the southern boundary of the study area. During the 1978 ALUR survey (MacDonald and Fudge 1979) they were captured in a tributary of the Thelon (9) and in the Maguse River (10). Lawrence et al. (1977) have reported lake chub in Maguse River (11) and Laird (1961) reported that lake chub were caught in Dubawnt Lake (6) during the 1959 Barren Grounds Survey.

REPORTS OF FOURHORN SCULPIN *Myoxocephalus quadricornis* (Linnaeus), ARCTIC FLOUNDER *Liopsetta glacialis* (Pallas), YELLOWFIN SOLE *Limada asper* (Pallas), SAFFRON COD *Elegirnus gracilis* (Tilesius), and TOOTHED COD *Arctogadus borisovi* Orjagin (Fig. 21)

There are fourhorn sculpin at the mouths of the Back (1) and Simpson (2) rivers (1979 ALUR survey), and in Baker Lake (3; Mcleod et al. 1976). Toothed cod, saffron cod, and Arctic flounder are present in the brackish water at the Simpson River mouth (2; 1979 ALUR survey). A yellowfin sole was caught in MacDougall Lake (4) during the 1959 Barren Grounds Survey (Johnson, unpublished data).

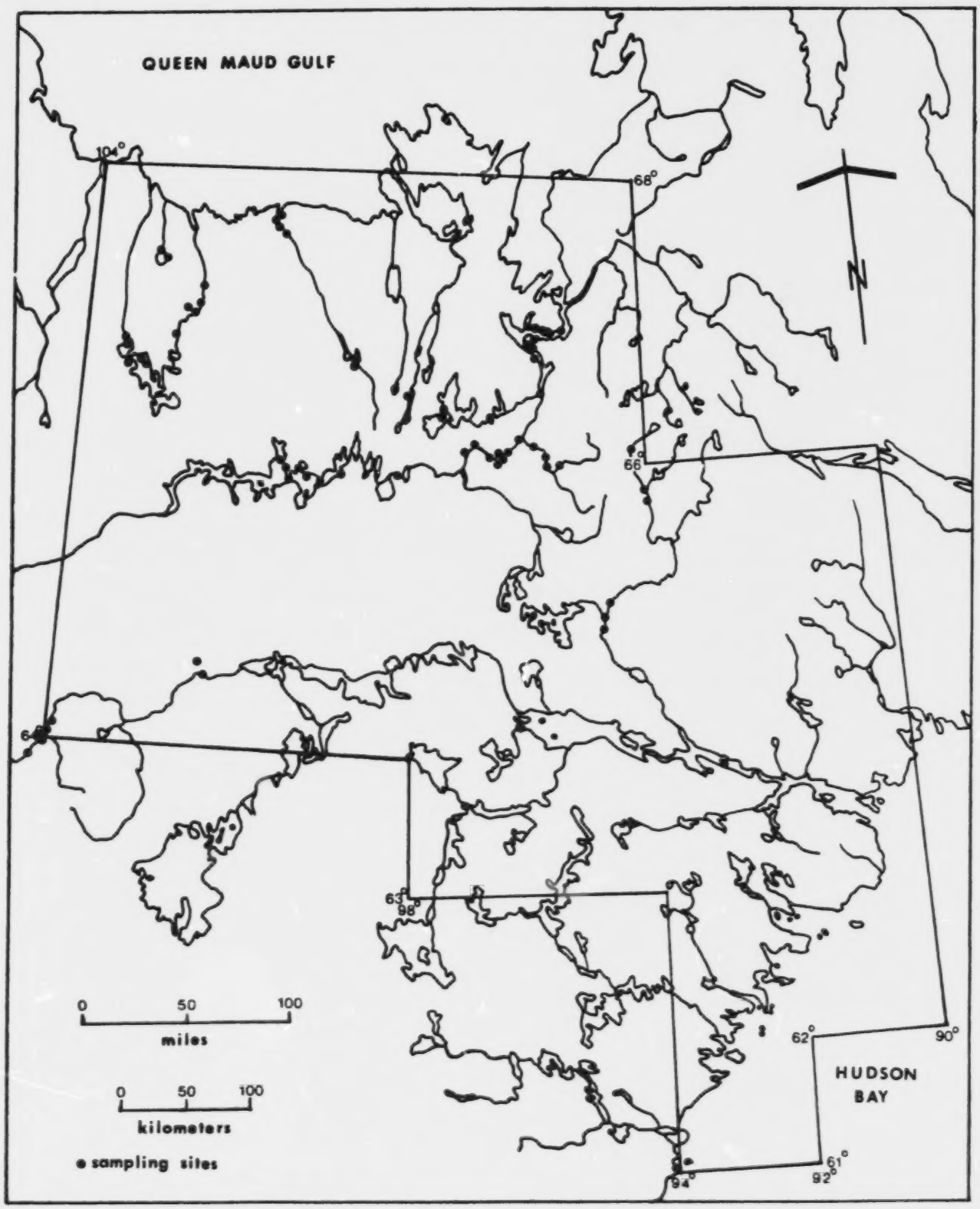

Fig. 6. The 1979 ALUR study area showing sampling locations.

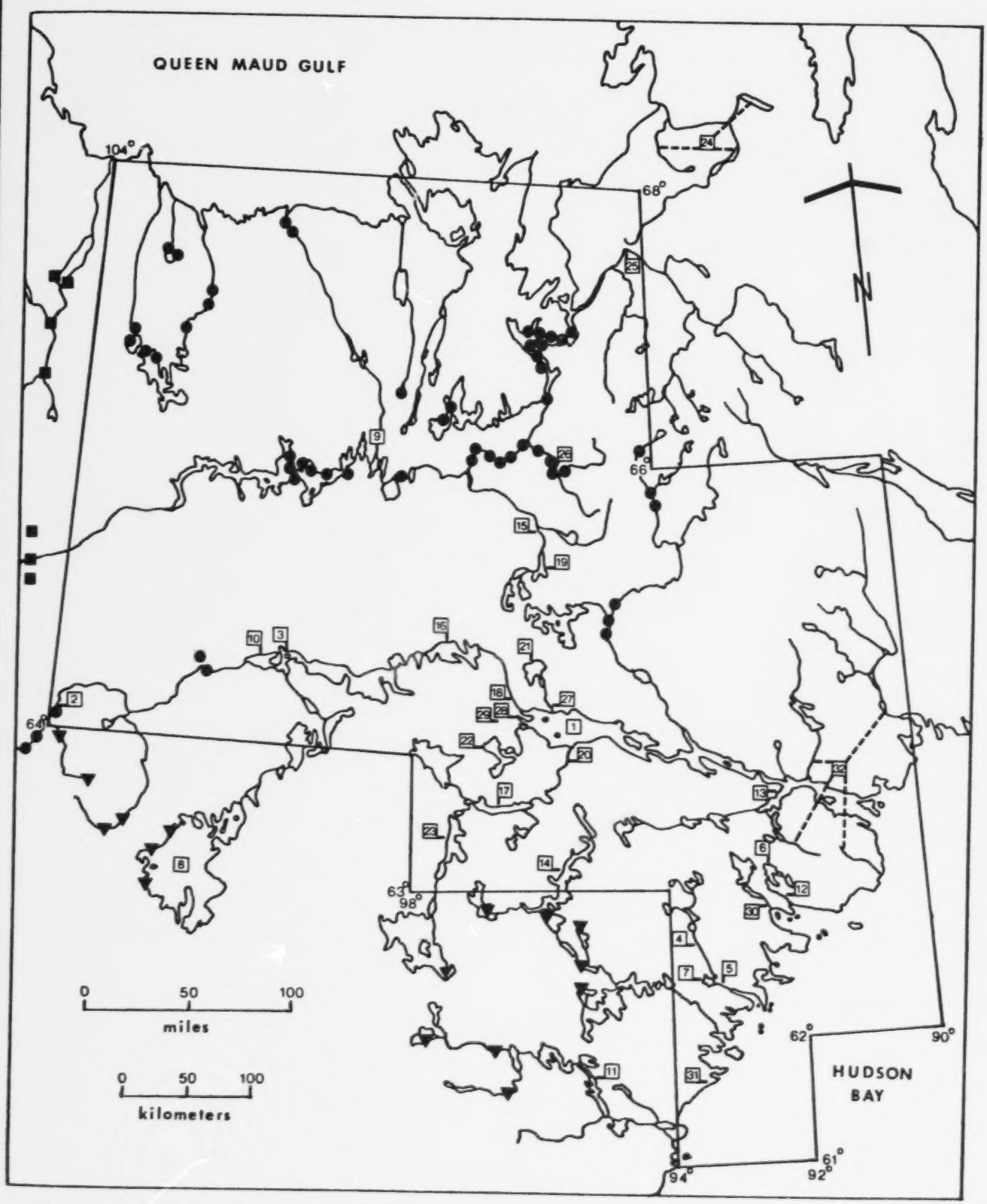

Fig. 7. Distribution of lake trout.

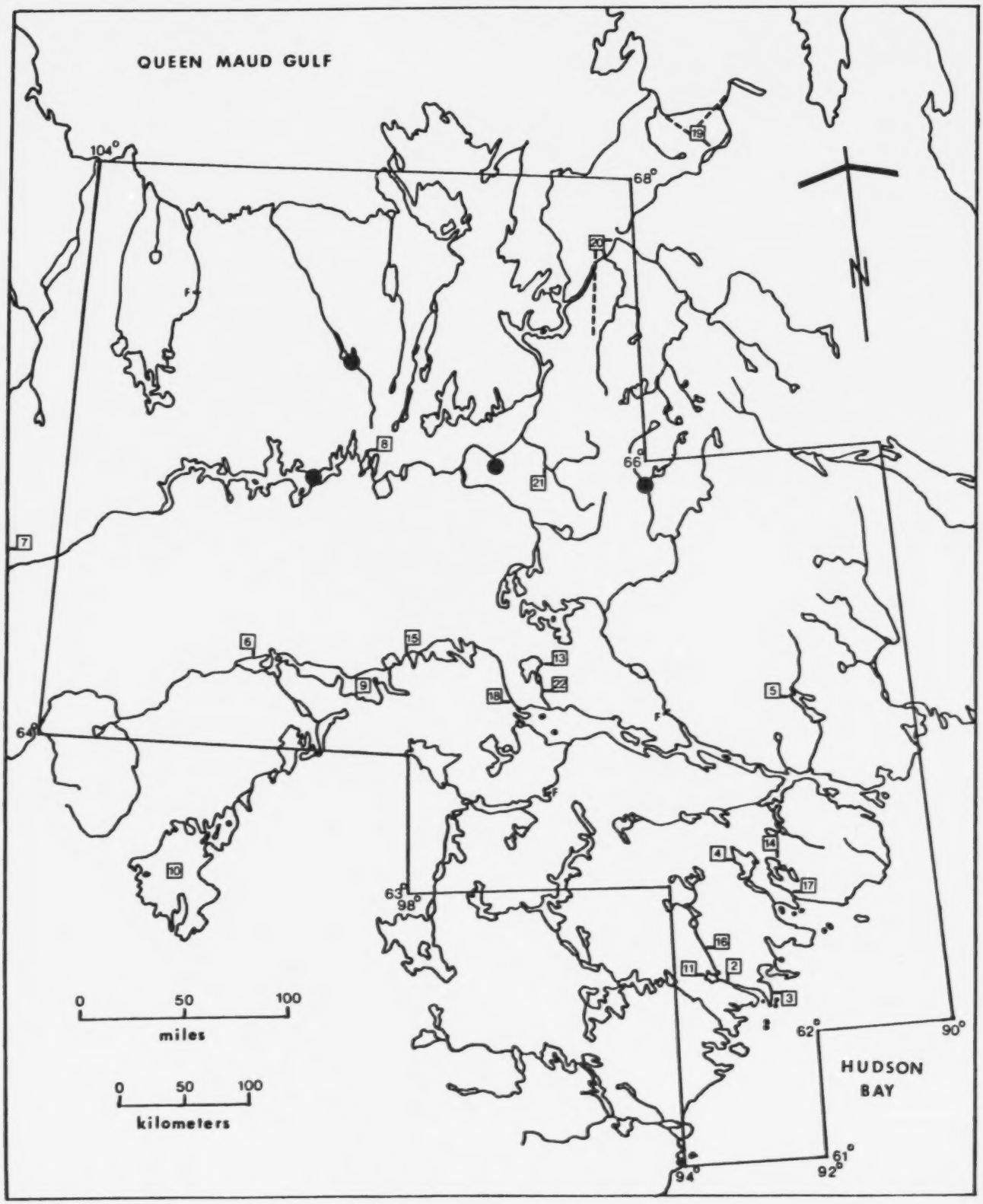

Fig. 8. Distribution of Arctic char.

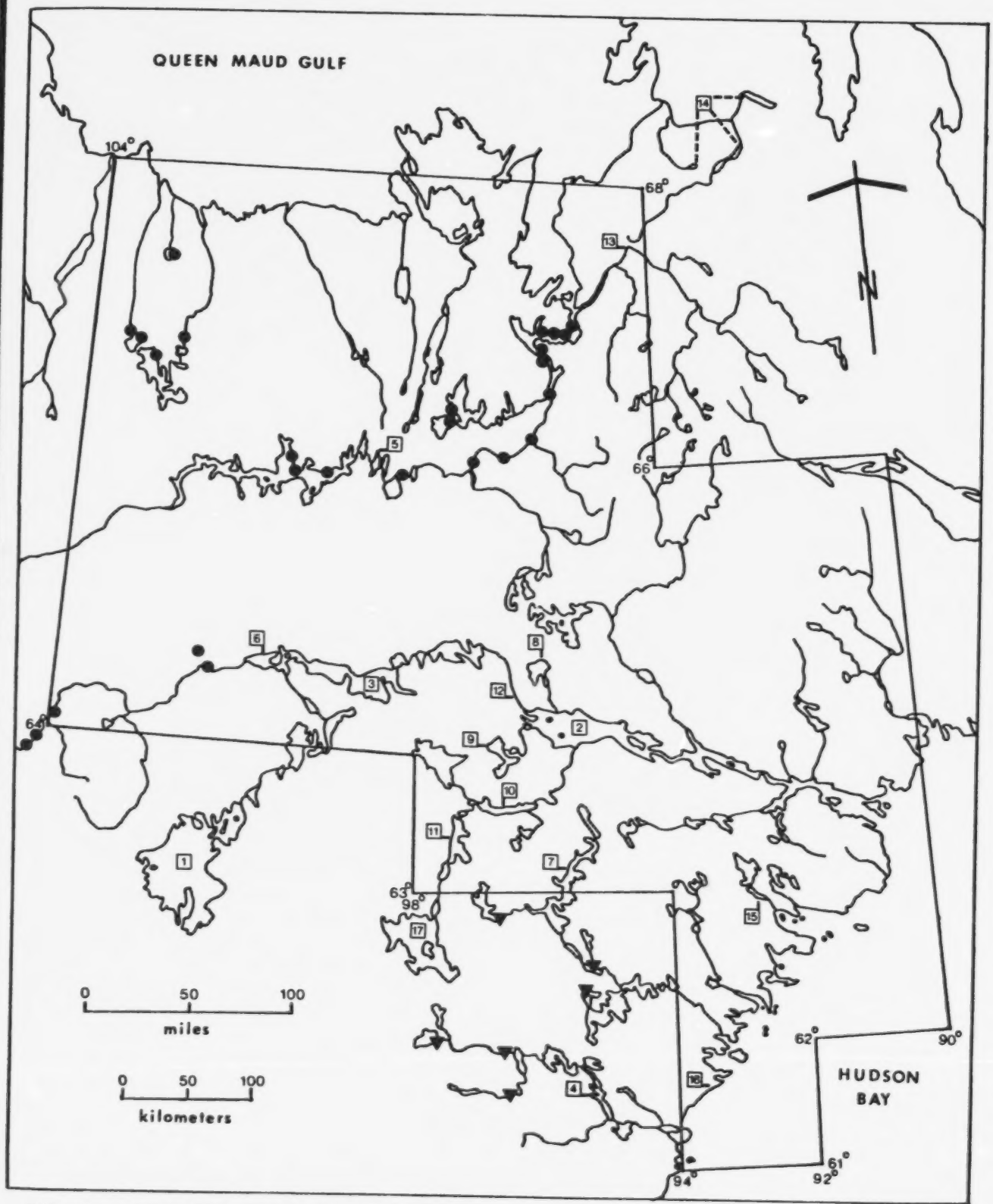

Fig. 9. Distribution of lake whitefish.

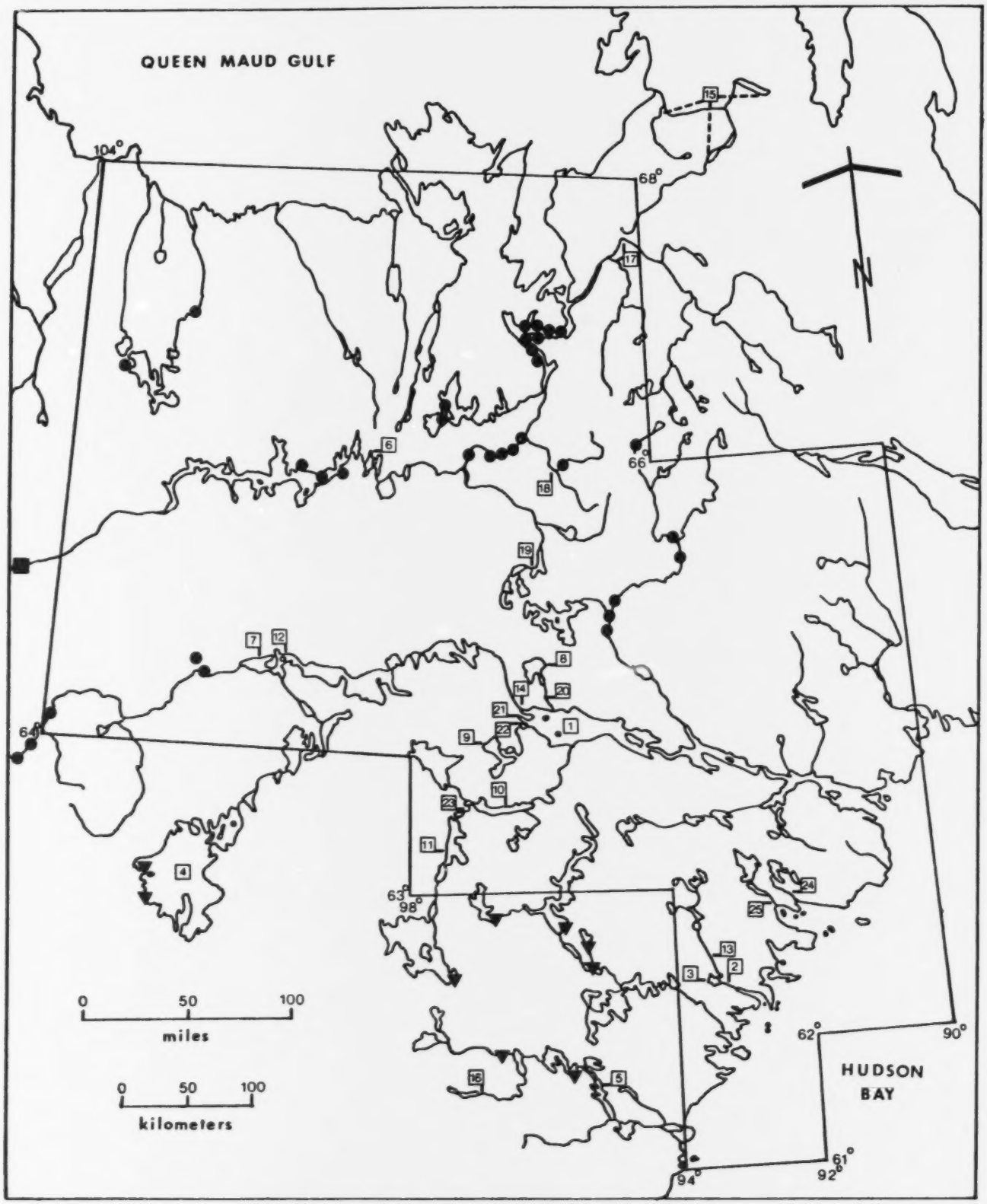

Fig. 10. Distribution of round whitefish.

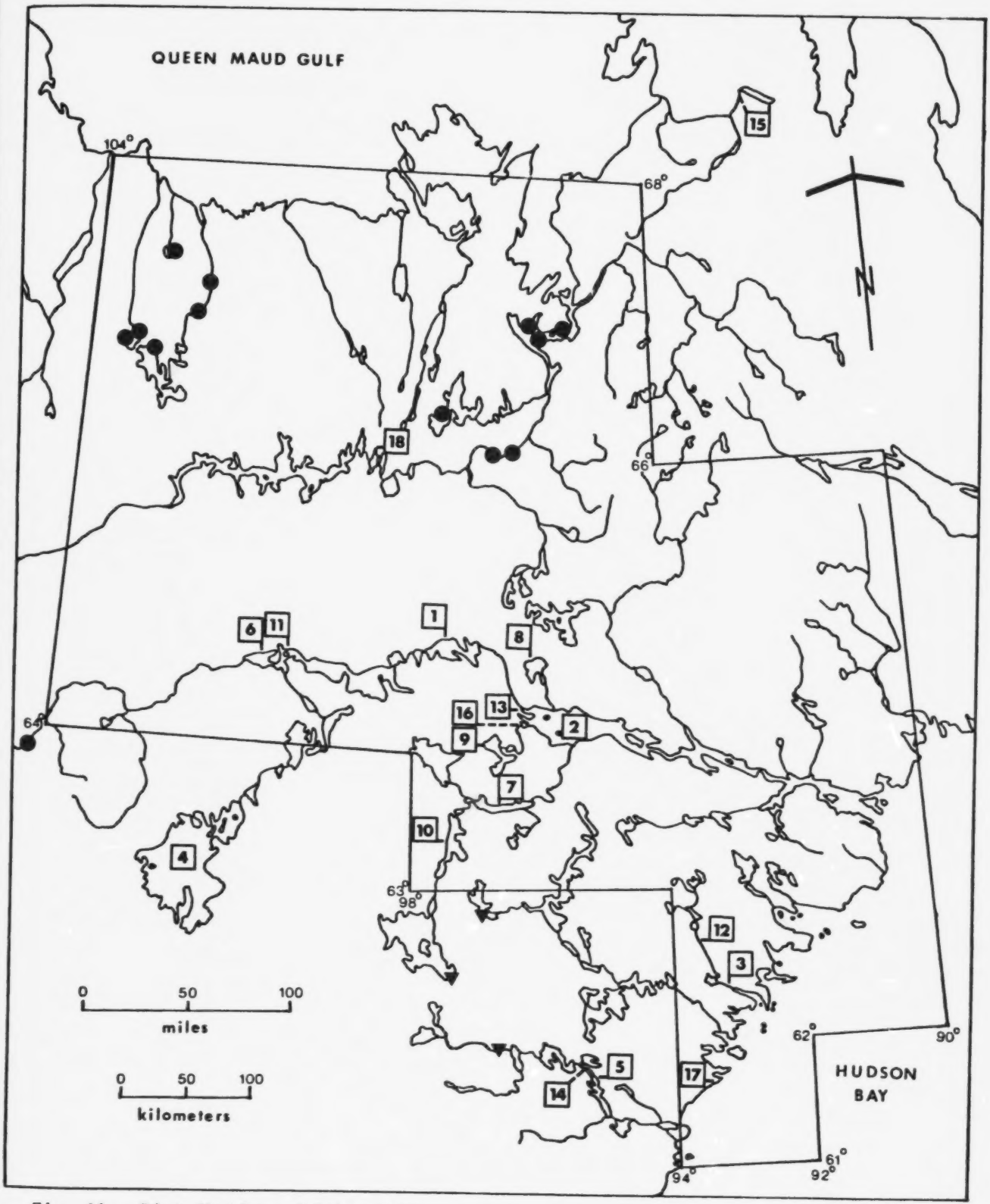

Fig. 11. Distribution of lake cisco.

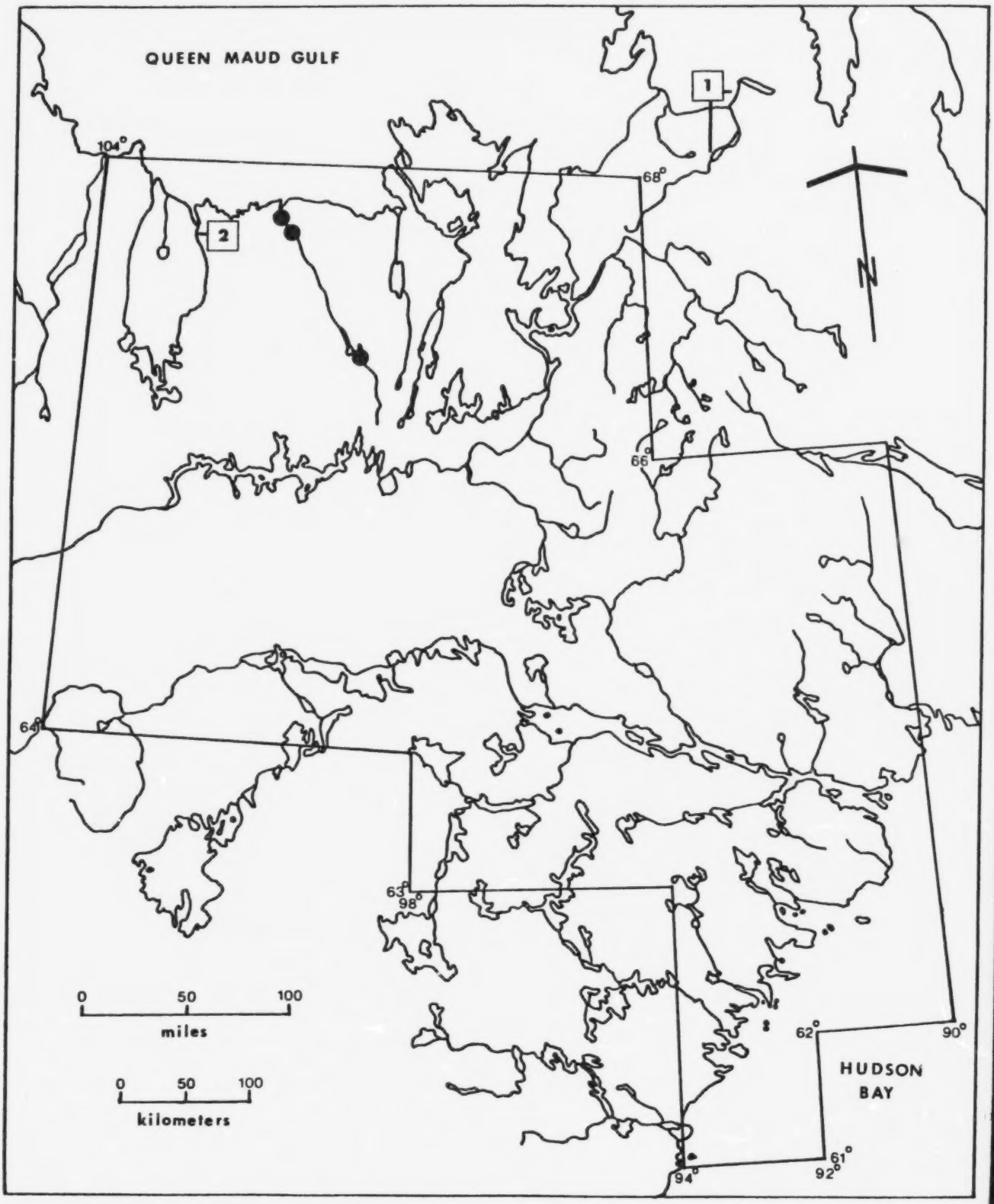

Fig. 12. Distribution of least cisco.

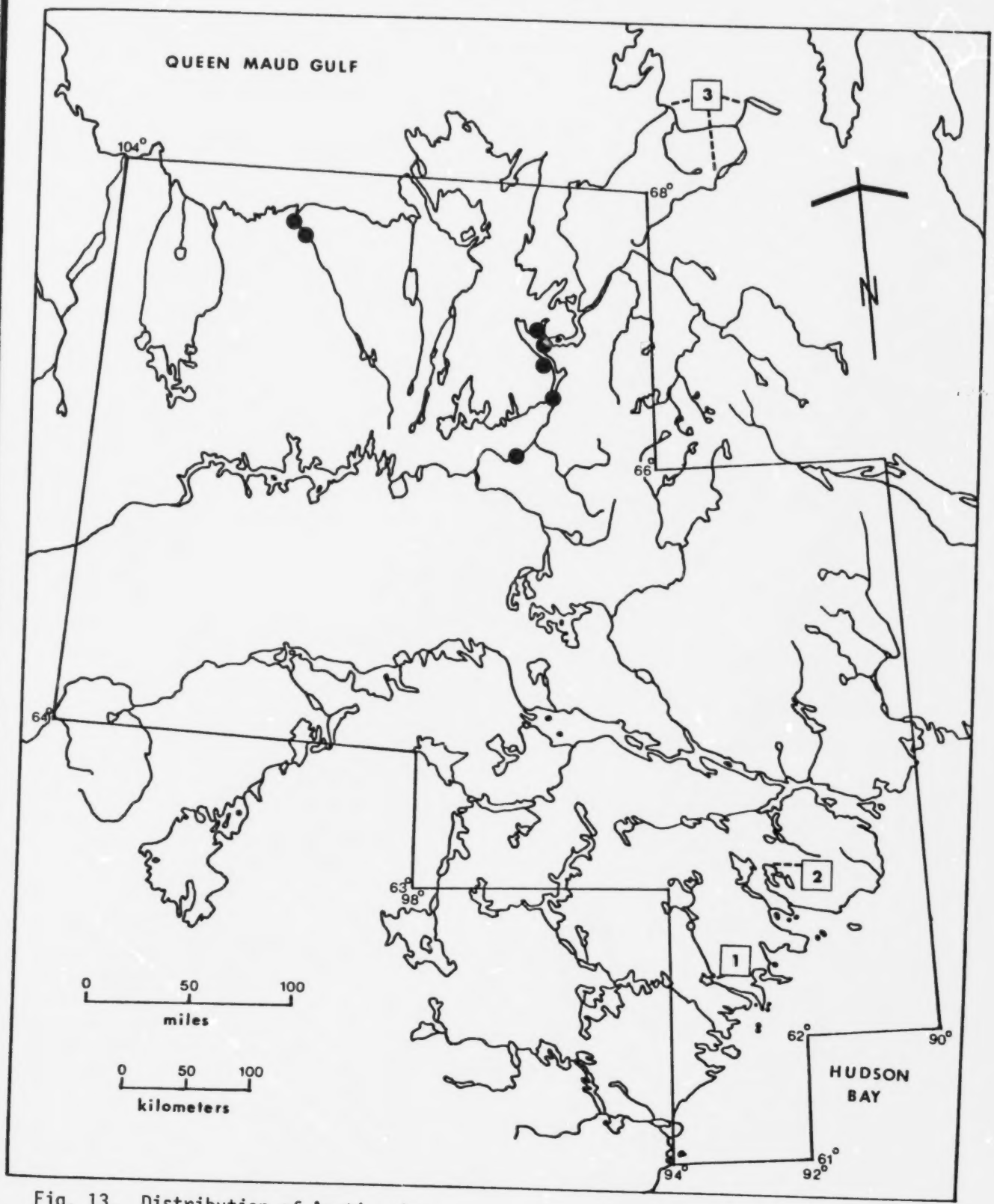

Fig. 13. Distribution of Arctic cisco.

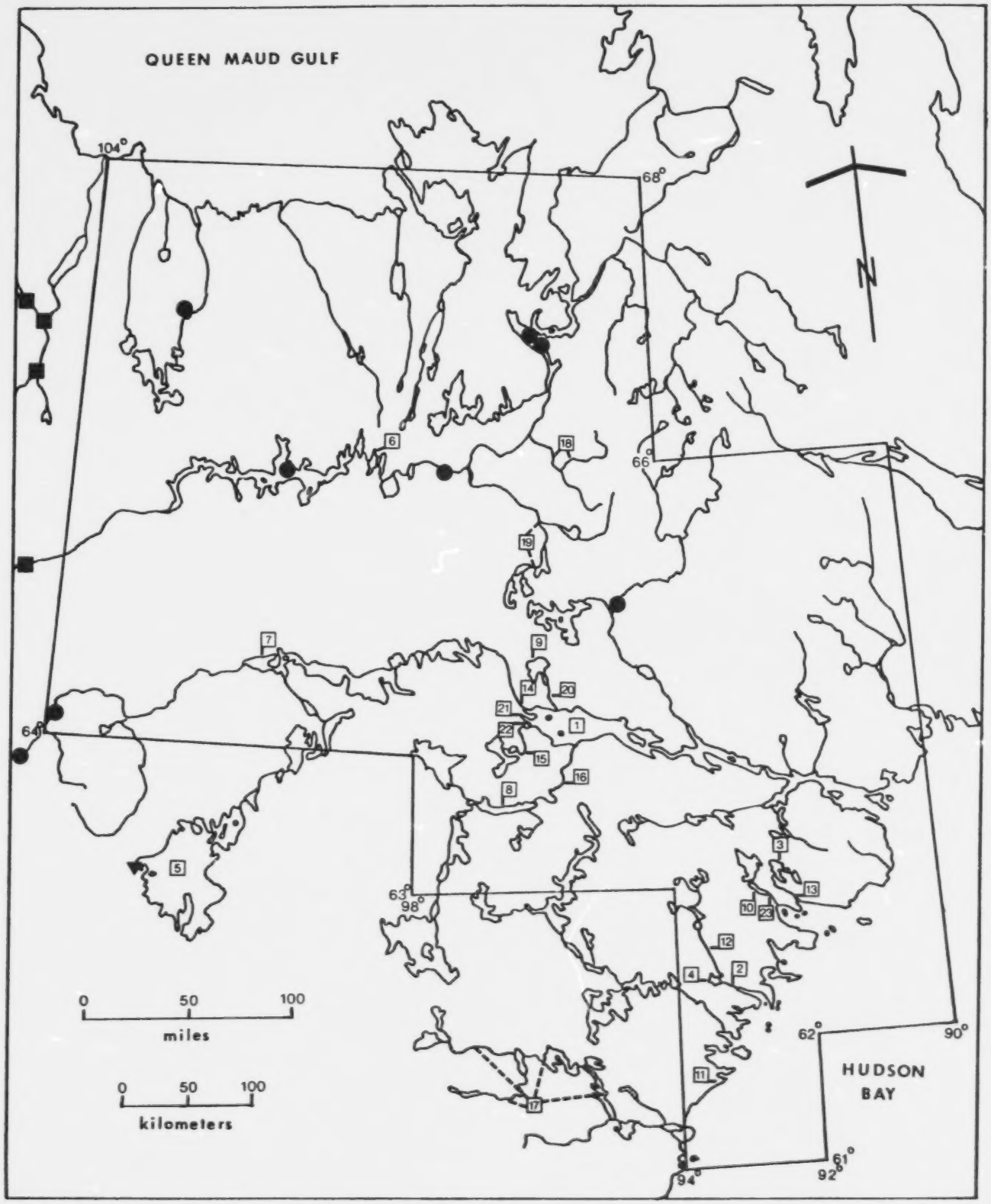

Fig. 14. Distribution of Arctic grayling.

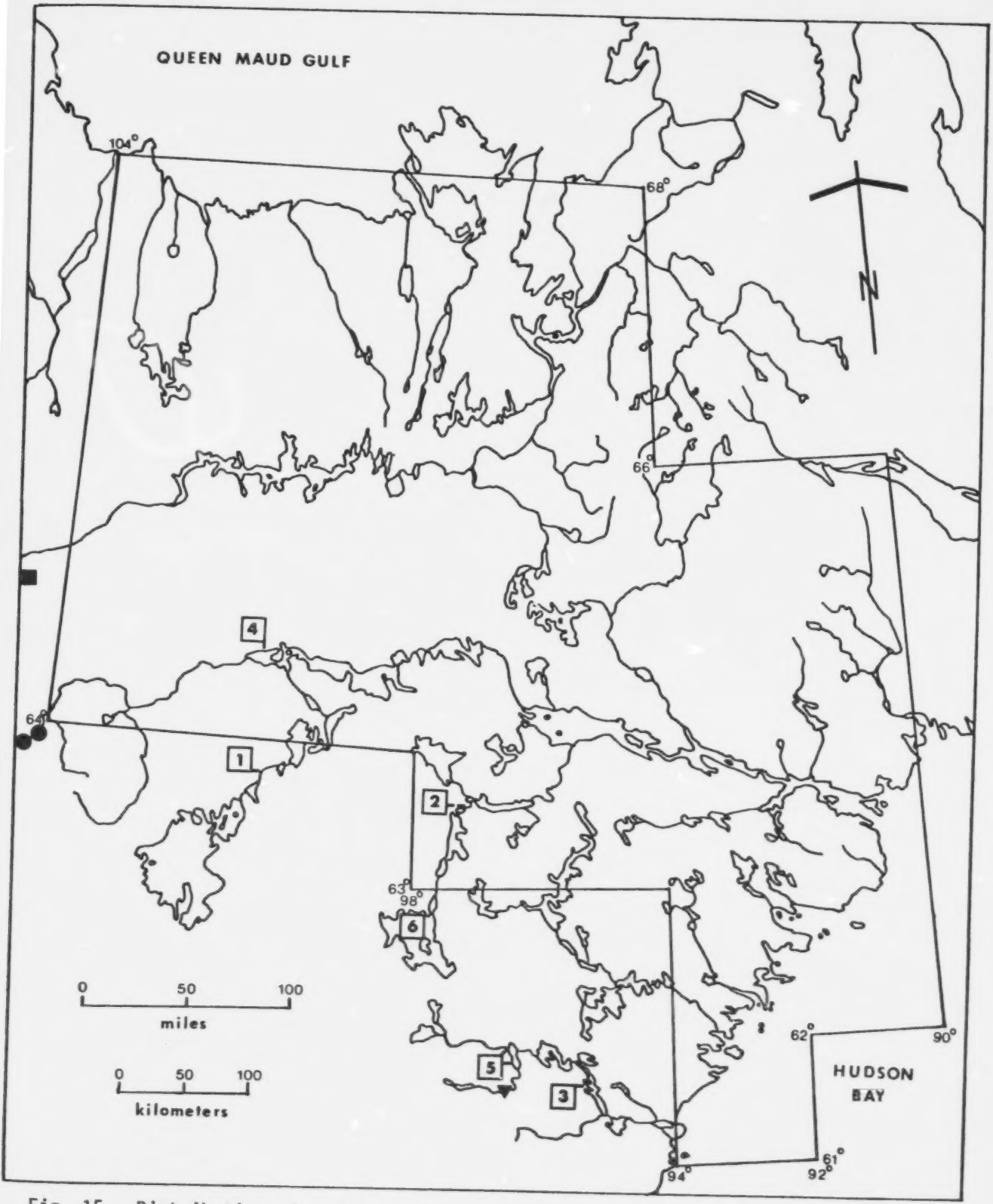

Fig. 15. Distribution of northern pike.

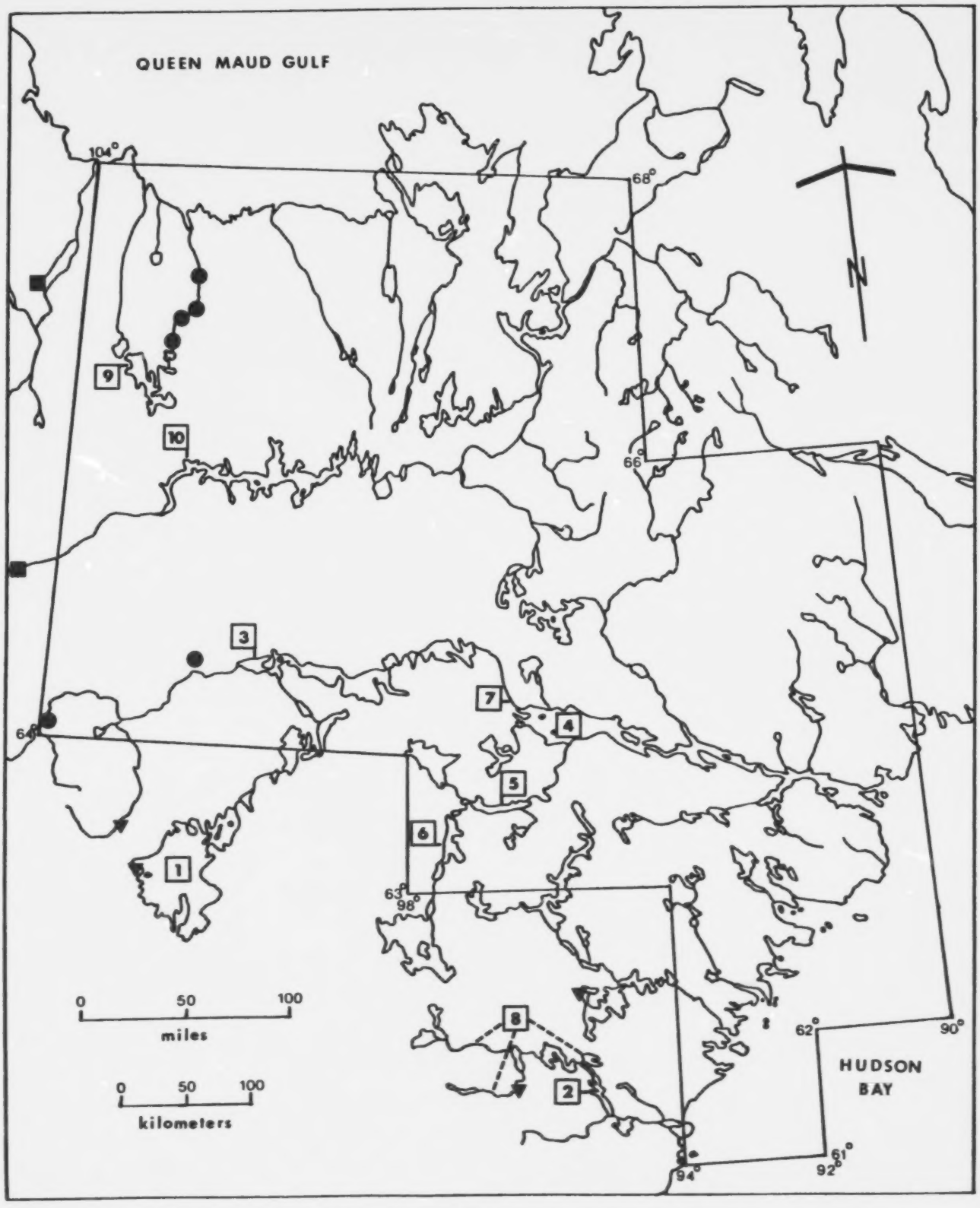

Fig. 16. Distribution of longnose sucker.

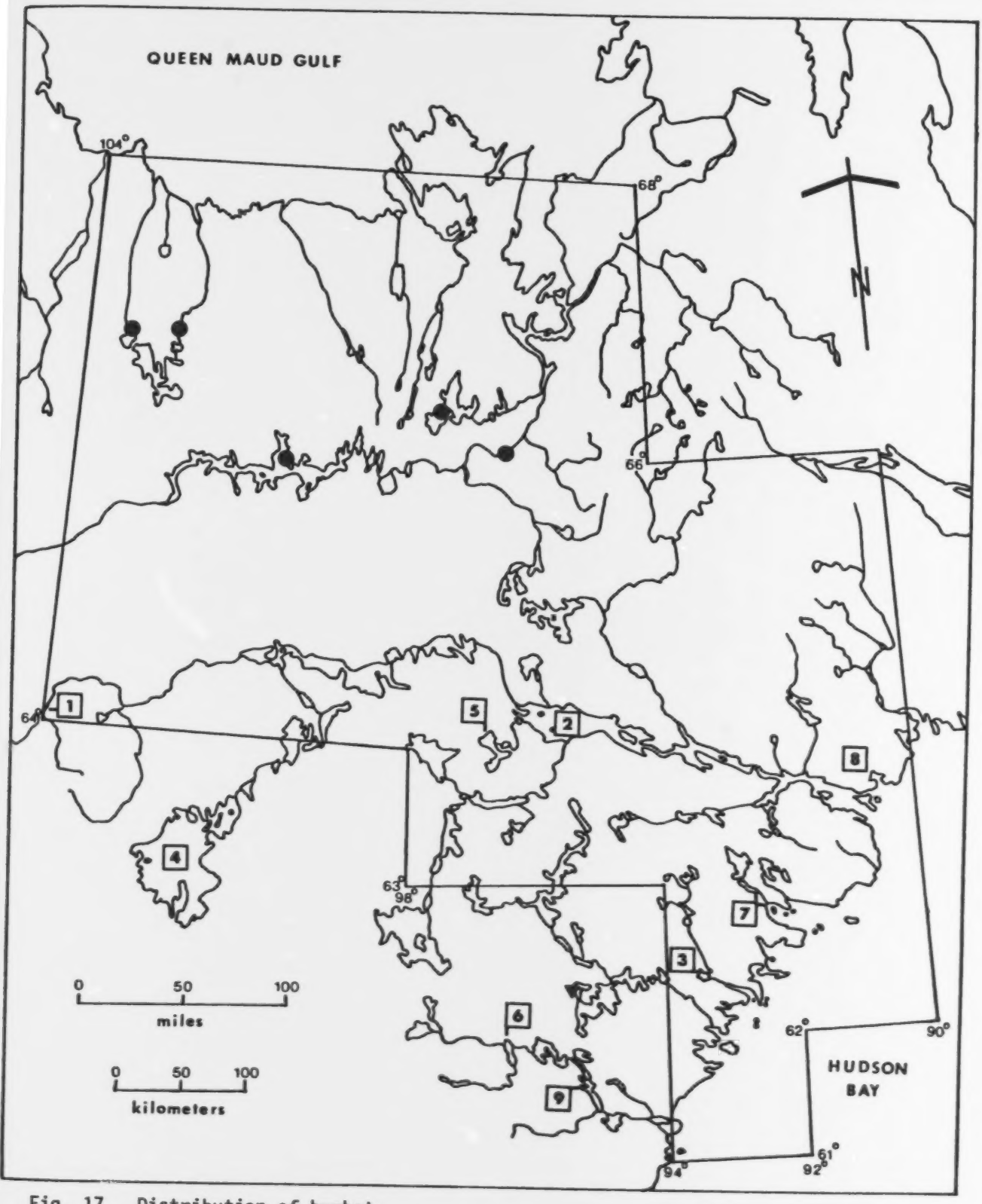

Fig. 17. Distribution of burbot.

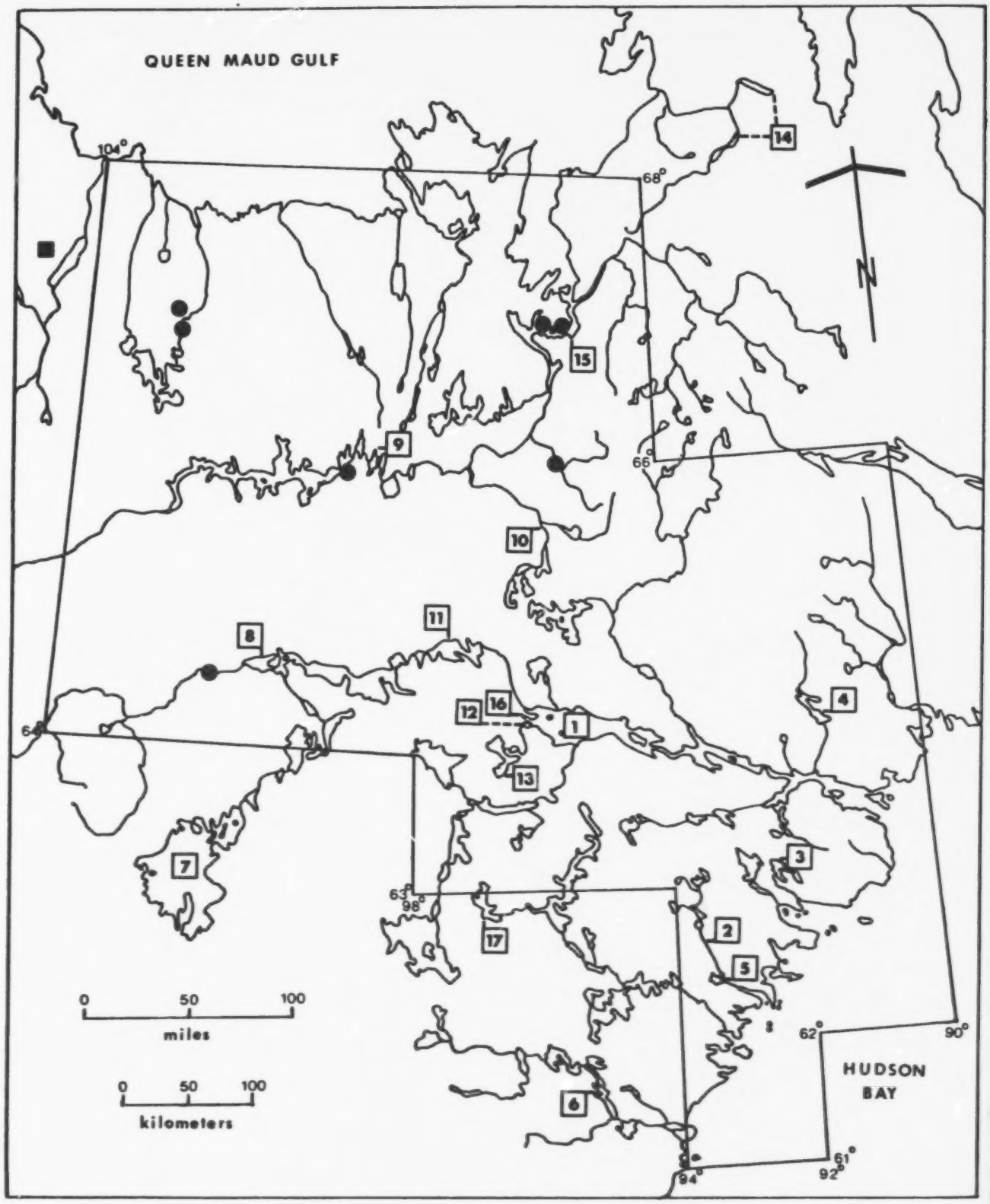

Fig. 18. Distribution of ninespine stickleback.

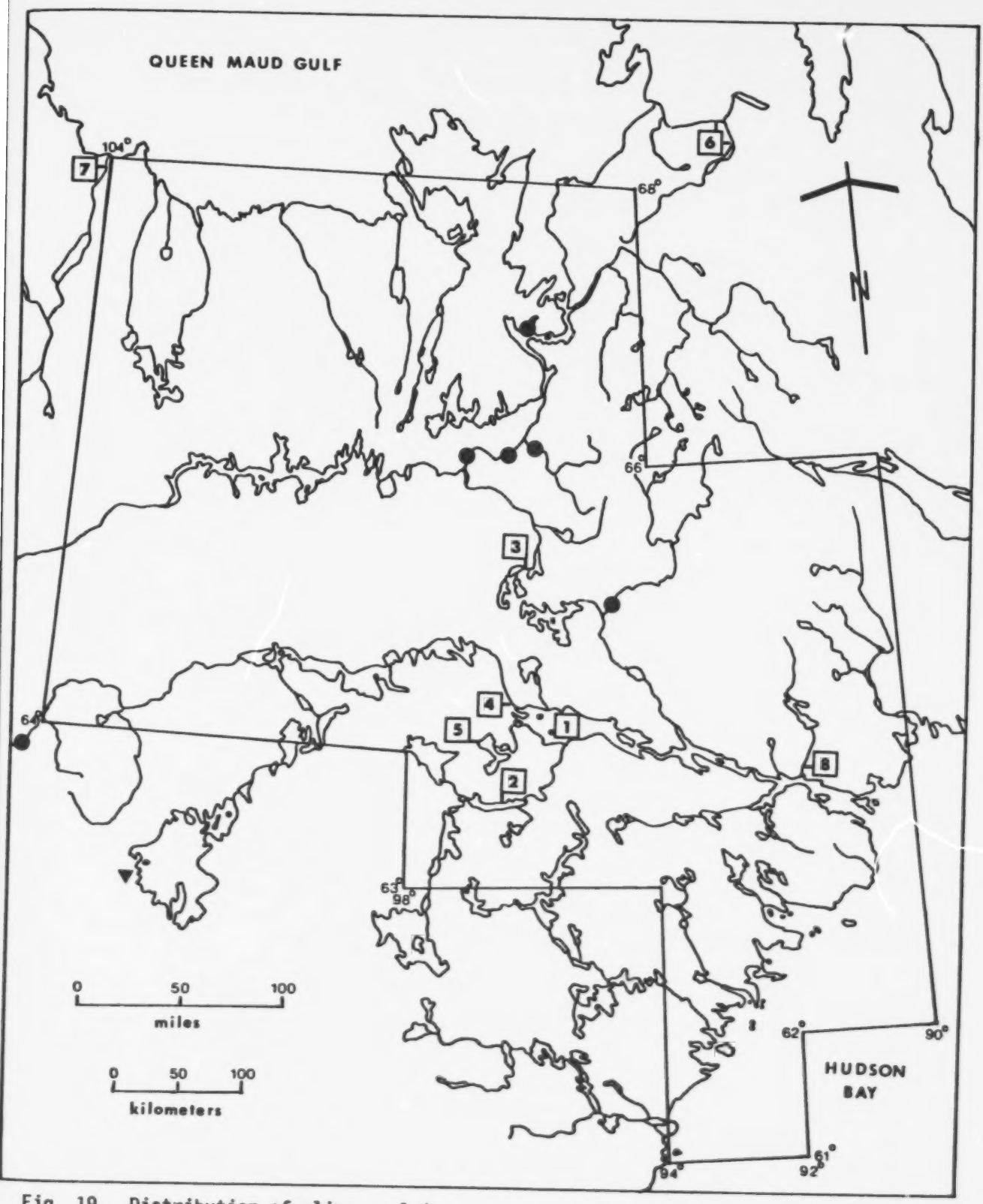

Fig. 19. Distribution of slimy sculpin.

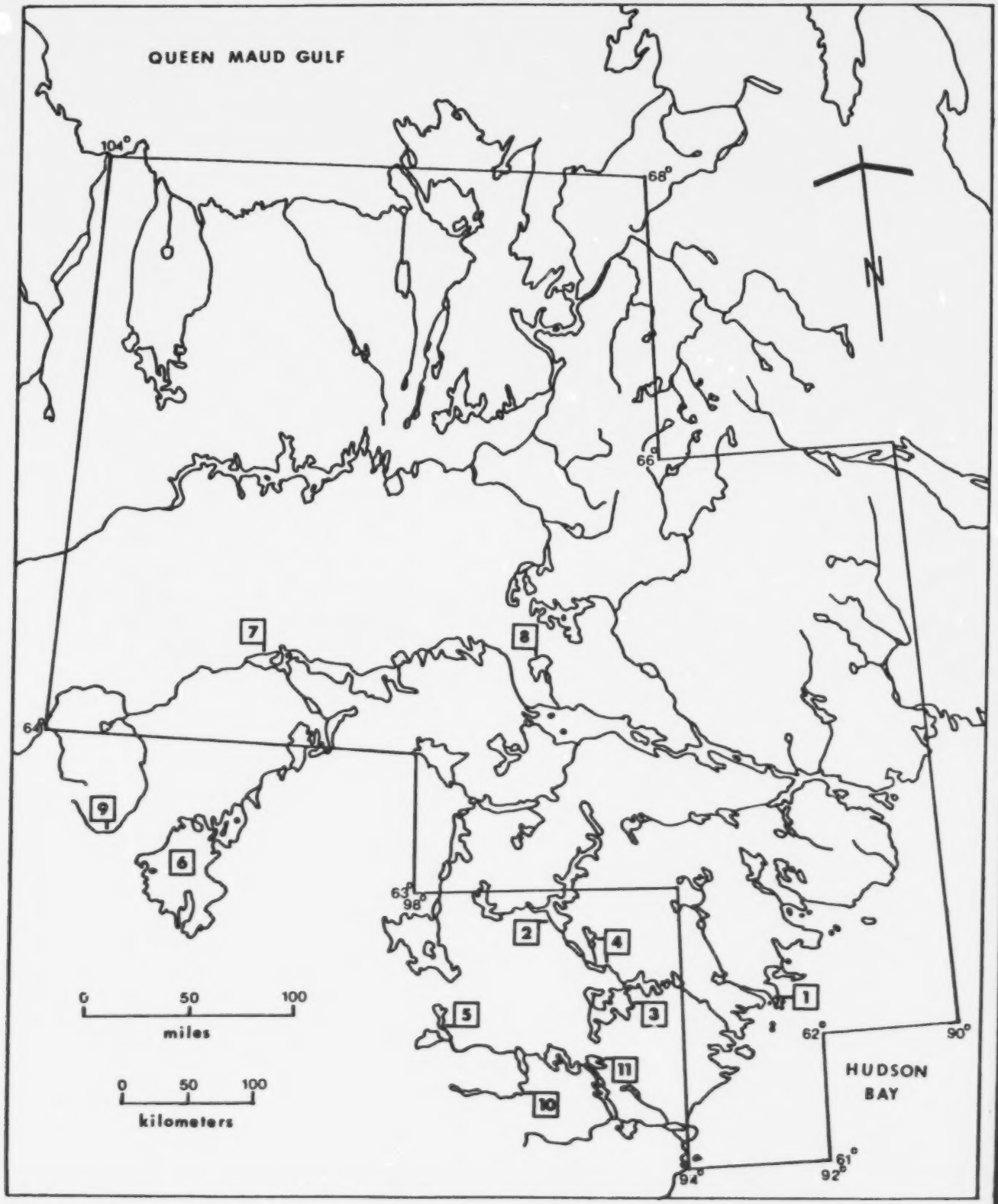

Fig. 20. Reports of threespine stickleback, spoonhead sculpin, and lake chub.

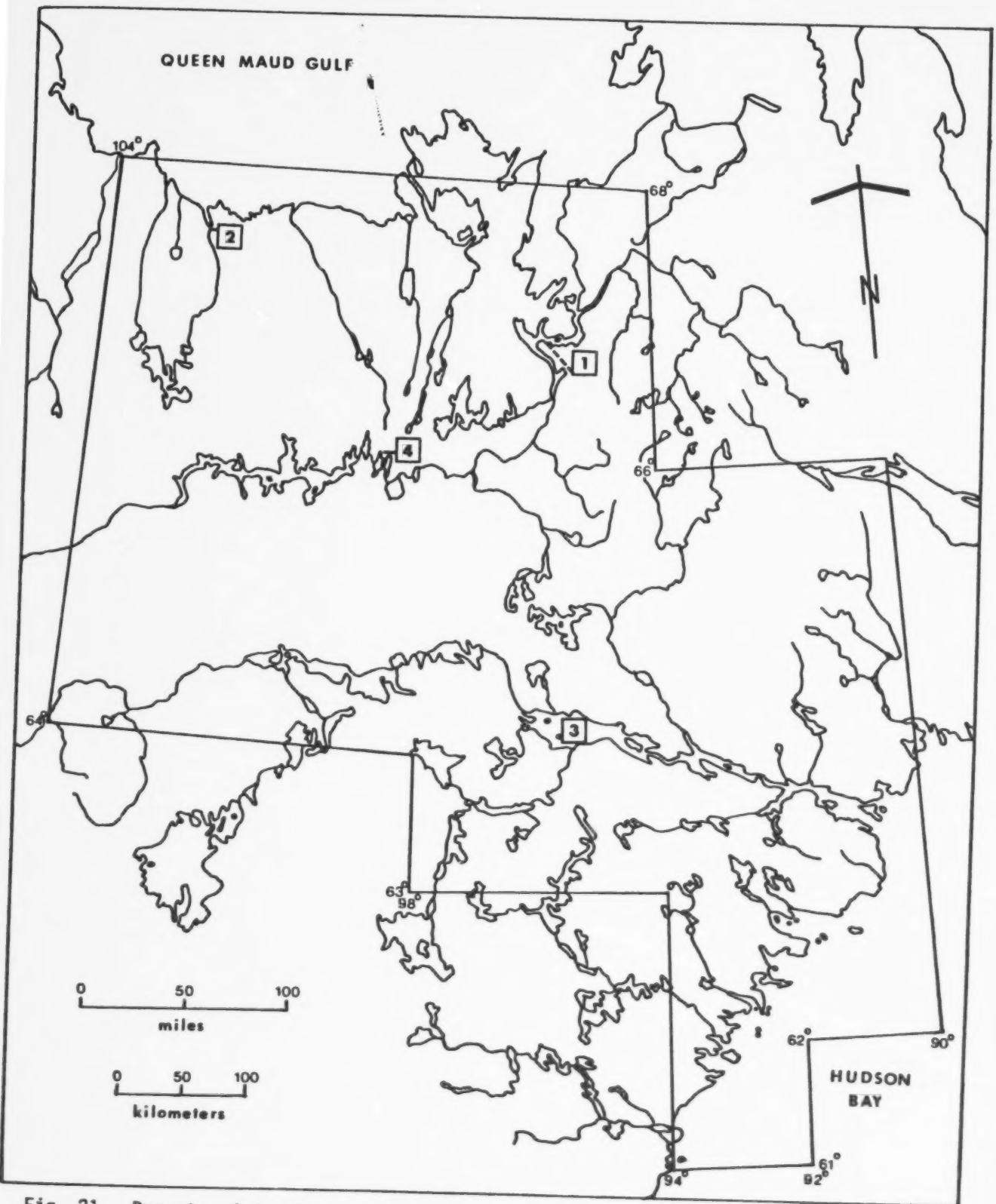

Fig. 21. Reports of fourhorn sculpin, Arctic flounder, yellowfin sucker, saffron cod and toothed cod.

APPENDIX

II

COMMERCIAL FISHING

Residents of Cambridge Bay, Baker Lake, Chesterfield Inlet, Rankin Inlet, Whale Cove and Eskimo Point fish commercially for Arctic char, lake trout and whitefish. Fishermen operate year-round but fishing efforts peak with spring and fall Arctic char migrations. Gill nets (14 cm mesh) and jigs are the preferred fishing methods. Fish caught commercially are sold either within the communities or to the Freshwater Fish Marketing Corporation (FFMC).

Prior to 1976, a government (NWT) fish cannery in Rankin Inlet processed Arctic char for distribution by the FFMC in Winnipeg. The cannery was supplied by fishermen from Baker Lake, Chesterfield Inlet, Rankin Inlet, Whale Cove and Eskimo Point. Since its closure in 1976 as uneconomical, only the Rankin Inlet fishermen continue to export Arctic char. In 1978, they sent 9,500 kg dressed weight of frozen Arctic char to the FFMC in Winnipeg (D. Topolinski, pers. comm.). Fishermen from the other communities now sell their catches within their communities. Cambridge Bay fishermen operate a small fish cleaning plant where their catches are cleaned, frozen and glazed. Lake trout and whitefish are sold within the community as well as about 4,000 kg round weight (rnd) of Arctic char. The remainder of the Arctic char catch, about 50,000 kg rnd, is sent to the FFMC in Edmonton for distribution (A. Kristofferson, pers. comm.).

Catch quotas have been placed on most of the major fishing areas but records of the quota utilizations are sketchy (R. Peet, pers. comm.; Boyd et al. 1977)(Fig. 22; Table 12). Work is currently under way to assess the commercial fishing potential of several rivers in the Chantrey

Inlet area. Fishermen in Gjoa Haven, on King William Island, hope to exploit these fisheries if they are commercially viable.

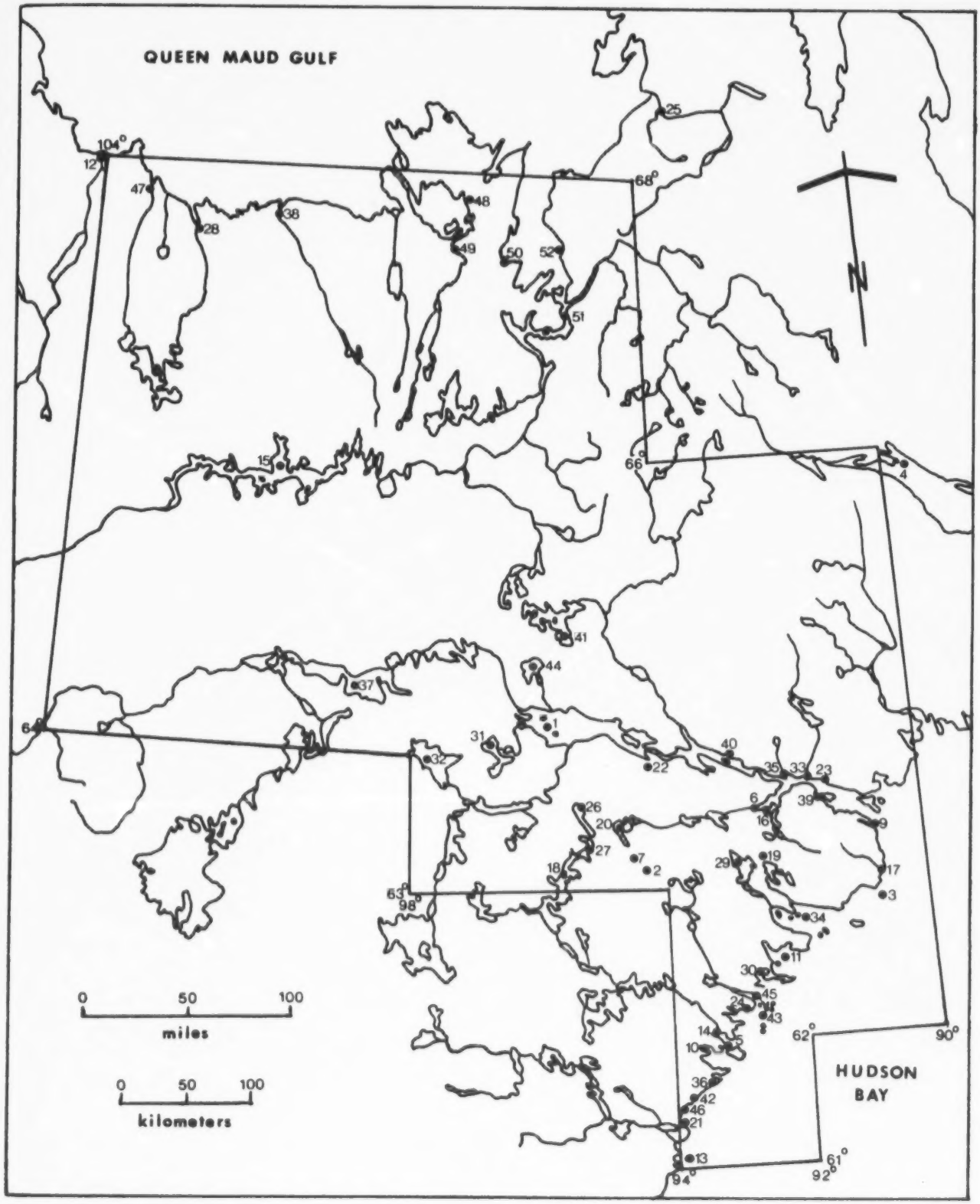

Fig. 22. Areas with commercial fishing quotas.

Table 12. Commercial fishing quotas 1979.

	Location	Species Fished	Quota (kg rnd)	Years Fished
1	Baker Lake 64°00'N, 96°00'W	LT, WF	22,700	1959→1979
2	Banks Lake 63°10'N, 94°25'W	LT, WF	8,170	-
3	Baker Foreland 62°51'N, 90°55'W	AC (sea run)	6,810	-
4	Bennet Bay 65°55'N, 89°40'W	AC (sea run)	2,270	-
5	Bibby Island 61°57'N, 93°22'W	AC (sea run)	2,270	-
6	Big River - Barbour Bay 63°33'N, 92°27'W	AC (sea run)	9,080	1974
7	Blakely Lake 63°18'N, 94°55'W	LT, WF	2,270	-
8	Brown River 65°55'N, 90°55'W	AC (sea run)	6,800	-
9	Chesterfield Inlet (Fish Bay) 63°18'N, 90°45'W	AC (sea run)	2,270	1962→1979
10	Copperneedle River 61°52'N, 93°37'W	AC (sea run)	4,540	1973→1979
11	Corbett Inlet 62°34'N, 92°33'W	AC (sea run)	4,540	1973→1977, 1979
12	Ellice River 68°03'N, 104°00'W	AC (sea run)	11,350	1971→1977
13	Eskimo Pt. area 61°07'N, 94°04'W	AC (sea run)	4,540	1962, 65, 69 1971→1978
14	Ferguson River 62°04'N, 93°20'W	AC (sea run)	18,160	1972→1977
15	Garry Lake 66°00'N, 100°00'W	LT, WF	45,400	1976

Table 12. (Cont'd.)

	Location	Species Fished	Quota (kg rnd)	Years Fished
16	Hanaway River 63°33'N, 92°22'W	AC (sea run)	4,540	1974
17	Josephine River 62°57'N, 90°46'W	AC (sea run)	4,540	-
18	Kaminuriak Lake 62°55'N, 95°30'W	LT, WF	45,400	1967, 71, 72, 73
19	Machum Lake 63°15'N, 92°35'W	LT, WF	4,540	-
20	MacQuoid Lake 63°25'N, 94°40'W	LT, WF	5,900	-
21	Maguse River 61°17'N, 94°03'W	AC	4,540	1977
22	Mallery Lake 63°55'N, 98°25'W	LT, WF	16,200	-
23	Merle Harbour 63°42'N, 91°24'W	AC (sea run)	2,270	-
24	Mistake Bay 62°10'N, 92°57'W	AC (sea run)	2,270	1973, 74
25	Murchison River 68°35'N, 93°30'W	AC	9,080	1973
26	Parker Lake A 63°30'N, 95°15'W	LT, WF	11,350	-
27	Parker Lake B 63°17'N, 95°15'W	LT, WF	9,080	-
28	Perry River 67°43'N, 102°10'W	AC	11,350	1972, 77, 79
29	Peter Lake 63°08'N, 92°48'W	LT, WF AC	7,580 2,270	1973
30	Pistol Bay 62°28'N, 92°44'W	AC	2,270	1974,76

Table 12. (Cont'd.)

	Location	Species Fished	Quota (kg rnd)	Years Fished
31	Pitz Lake 64°00'N, 96°45'W	LT, WF	13,600	-
32	Princess Mary Lake 64°00'N, 97°35'W	LT, WF	22,700	-
33	Ranger Seal Bay 63°45'N, 91°43'W	AC	11,350	1974
34	Rankin Inlet area 62°45'N, 92°05'W	AC	4,540	1961→71, 1973→79
35	Robin Hood Bay 63°45'N, 92°02'W	AC	6,810	1974
36	Sandy Point 61°45'N, 93°18'W	AC	2,270	1972, 73, 74, 76
37	Schultz Lake 64°45'N, 97°30'W	LT, WF	18,160	-
38	Simpson River 67°48'N, 100°45'W	AC	4,540	-
39	Steep Bank Bay 63°36'N, 91°37'W	AC	4,540	1977
40	Stony Point area 63°54'N, 92°45'W	AC	6,810	1974→1977
41	Tehek Lake 64°55'N, 95°38'W	LT, WF	22,700	-
42	Wallace River 61°36'N, 93°40'W	AC	2,270	1972, 1974
43	Whale Cove area 62°09'N, 92°35'W	AC (Landlocked)	2,270	1960→1977
44	Whitehills Lake 64°50'N, 96°00'W	LT, WF	8,170	-
45	Wilson Bay 62°18'N, 92°53'W	AC	9,080	1960, 61, 77, 79

Table 12. (Cont'd.)

	Location	Species Fished	Quota (kg rnd)	Years Fished
46	Unnamed river (Sandy Point area) 61°35'N, 92°50'W	AC	2,270	-
47	Unnamed river (east of Ellice River) 67°53'N 103°07'W	AC	11,350	1975
	COMMERCIAL TEST QUOTAS 1979			
48	Tern Lake	AC	2,270	1979
49	Kalleet River	AC	2,270	1979
50	Elliot Bay River	AC	2,270	1979
51	Back River	AC	2,270	1979
52	Irby and Mangles Bay	AC	2,270	1979

APPENDIX

III

DOMESTIC FISHING

Domestic fishing is a year-round activity which occurs over much of the study area (Fig. 23). Fishing efforts are concentrated near the communities and peak during downstream migrations of Arctic char in May and June. Outlying areas are used by trappers and hunters who fish for food and bait. Fishermen use gill nets, jigs and rod and reel. Gill nets are set through the ice in the winter and during the open water periods in the summer; jigs are used during freeze-up and break-up and when the ice is too thick to easily set gill nets; angling is primarily a means of relaxation. Fish species caught by residents of the coastal communities, in order of importance are Arctic char, lake trout, and whitefish. In Baker Lake the order of species importance is reversed. Residents of Gjoa Haven also catch many large Arctic cisco during winter fishing on the Back River at the exit of Franklin Lake.

Domestic fishing is an important source of protein and continues to be an inexpensive form of food production that requires only small amounts of capital and equipment. It supplies about 20 percent of the food consumed by the residents of communities in the area (Carder, in prep.). Fish are eaten fresh, dried or frozen for use in the future, or fed to the dogs.

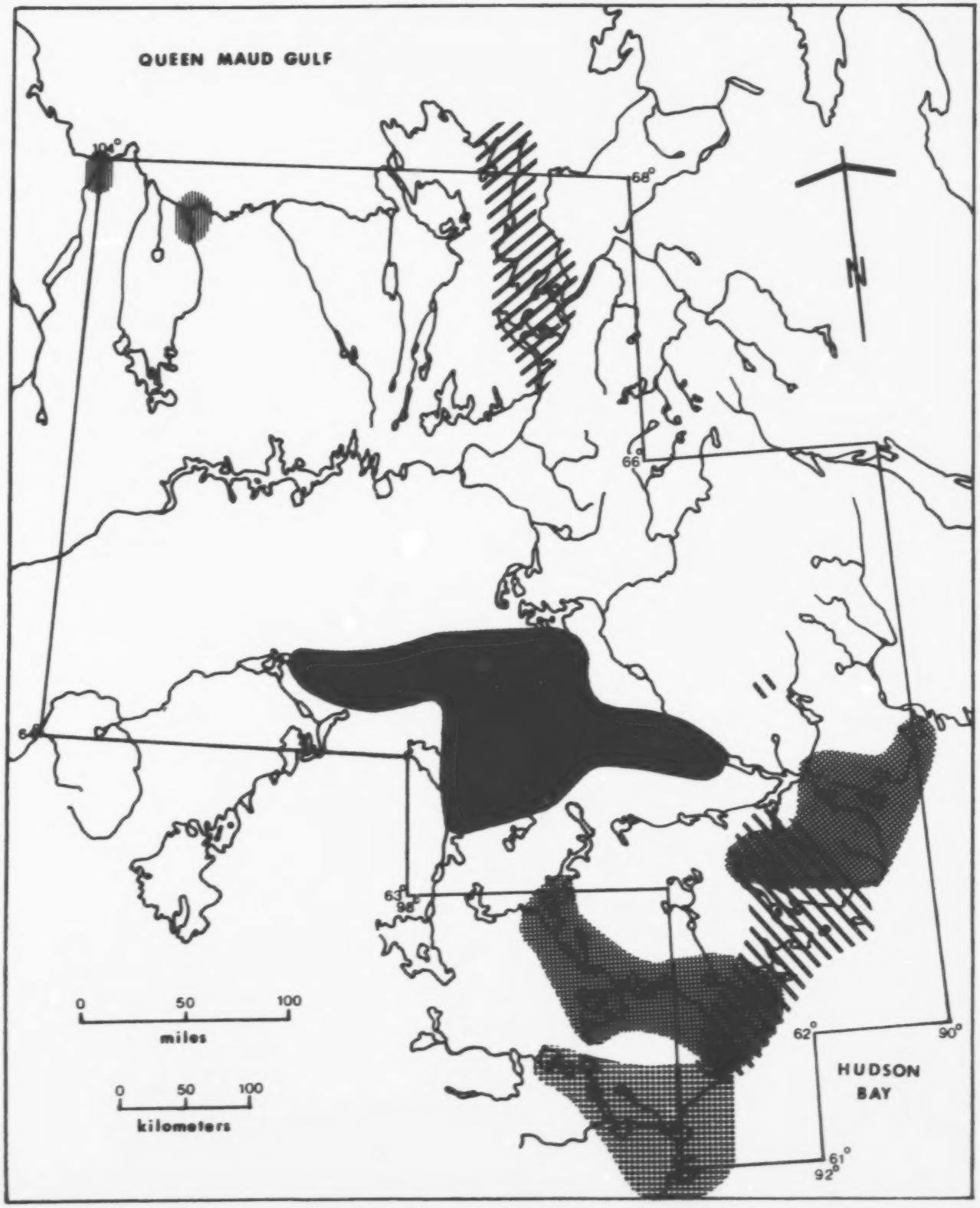

Fig. 23. Domestic fishing areas for the communities of Cambridge Bay, Gjoa Haven, Baker Lake, Chesterfield Inlet, Rankin Inlet, Whale Cove, and Eskimo Point.

APPENDIX

IV

Table I. Fisheries resource sampling raw data, Back River System, NWT.

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
Lake trout (*Salvelinus namaycush*)						
1	Garry Lake	875	6650	2	50	
	66°00'N x 100°15'W	580	2300	10	20	
	18/8/79	502	1550	3	22	
		464	1160	1	18	
		447	930	10	12	
		550	1750	10	20	
		477	1180	8	16	Amphipoda
		275	200	0	10	
2	Garry Lake	820	5650	2	-	
	65°59'N x 100°15'W	688	2900	0	20	
	18/8/79	568	2050	10	20	
		463	1180	2	17	Trichoptera
		485	1190	1	16	
		515	1570	3	16	
		461	1150	8	18	Diptera pupae
		185	60	0	6	
		115	30	0	4	
3	Garry Lake	568	1730	2	26	
	65°57'N x 100°08'W	445	1030	8	15	
	18/8/79	493	1340	8	14	
		462	940	2	12	
4	Lower Garry Lake	730	4000	8	35	Burbot
	65°58'N x 99°59'W	790	5550	8	41	
	18/8/79	404	740	1	11	Trichoptera
		420	850	8	14	Gastropoda
		440	950	1	12	
		412	800	7	11	Trichoptera
		354	510	1	11	Amphipoda
		215	150	0	6	
5	Lower Garry Lake	650	2900	4	33	
	65°56'N x 99°50'W	680	3500	4	49	
	18/8/79	602	2550	4	25	
		604	2250	4	28	
		773	5950	4	48	
		816	7400	4	39	
		514	1460	4	20	
		359	450	7	14	Fish remains

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
6	Lower Garry Lake	894	8350	4	61	Fish remains
	65°54'N x 99°35'W	482	1150	4	26	
	18/8/79	437	1040	4	14	Amphipoda
		475	1170	10	17	Amphipoda
		254	160	0	6	
		105	20	0	-	
7	Lower Garry Lake	712	3400	2	23	
	65°55'N x 99°12'W	1035	10650	8	44	
	17/8/79					
8	Back River below	584	1940	8	23	Diptera larvae
	Sinclair Falls	600	2250	2	22	Slimy sculpin, small mammal
	66°53'N x 98°31'W					
	17/8/79	478	1010	2	20	Amphipoda
		480	1220	10	21	
9	Back River above	465	1120	2	18	Diptera larvae, sculpin
	Mount Meadowbank	545	1550	2	19	Diptera larvae
	66°09'N x 97°02'W	480	1200	2	19	Diptera larvae
	14/8/79	470	1510	3	21	Diptera larvae, pupae
		405	630	8	9	Diptera pupae
		268	190	1	7	Diptera larvae, pupae
		478	1400	4	21	Diptera larvae, pupae
		560	1900	2	22	Diptera larvae, pupae
		530	1620	9	22	Diptera pupae
		182	60	7	4	
10	Back River below	465	900	2	12	Chironomid larvae
	Mount Meadowbank	570	1820	2	20	Notostraca
	66°10'N x 96°58'W	500	1420	2	19	
	14/8/79	98	30	0	2	
11	Back River	815	6400	3	58	Round whitefish
	66°04'N x 96°43'W	540	1900	4	32	Cisco sp.
	14/8/79	740	4200	10	27	
12	Back River	114	16	0	3	
	66°05'N x 96°31'W	430	690	2	15	Coregonus fry
	27/8/79	436	720	8	20	Notostraca
		339	370	7	13	
		492	1010	1	18	Notostraca
		765	4750	12	27	
13	Back River	591	2200	11	31	
	66°04'N x 96°29'W	255	170	7	12	
	27/8/79					

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
14	Herman River 66°01'N x 95°29'W 13/8/79	540	1510	1	16	Trichoptera
		865	6200	9	27	
15	Herman River 66°06'N x 95°45'W 13/8/79	350	460	8	11	
16	Herman River 66°09'N x 95°47'W 13/8/79	420	800	8	13	Copepoda
		430	900	8	11	Copepoda
		325	390	7	7	Copepoda
		495	1600	10	21	Notostraca, small mammal
		585	1760	2	25	Notostraca
		395	570	9	13	Copepoda
		180	60	1	3	
17	Herman River 66°11'N x 96°03'W 13/8/79	655	2600	2	21	Trichoptera, chironomid larvae
		583	1900	9	20	
		515	1300	1	19	Chironomid larvae
		500	1250	9	26	Copepoda
		450	930	9	13	Copepoda, chironomid larvae
		430	870	9	13	Chironomid larvae
		308	300	1	9	Chironomid larvae
18	Back River at mouth of Herman River 66°13'N x 96°10'W 13/8/79	735	4600	4	29	Fish remains
		297	250	7	11	Sculpin
		240	160	1	-	Diptera pupae
		248	140	7	6	Trichoptera
		196	65	1	6	Diptera pupae, sculpin
		198	60	0	7	Diptera pupae
19	Unnamed lake on Montresor River 66°20'N x 97°32'W 26/8/79	779	5400	9	52	
		630	2450	8	35	
		745	5200	9	33	Lake whitefish
		772	4500	8	26	Fish remains
		690	3700	8	27	
		395	670	11	20	
		245	150	7	9	

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
20	Unnamed lake on Montresor River 66°22'N x 97°32'W 26/8/79	872	8800	8	34	
		870	8000	8	44	
		931	7650	8	55	Fish remains
		730	4150	6	44	
		691	3350	8	32	
		638	2350	8	28	
		572	2050	8	20	Fish remains
21	Back River at mouth of Montresor River 66°33'N x 95°48'W 15/8/79	455	840	8	19	
		438	890	9	22	Chironomid larvae
		220	80	0	6	
22	Franklin Lake 66°52'N x 96°05'W 15/8/79	844	6100	4	40	
23	Franklin Lake 66°54'N x 96°04'W 15/8/79	712	3320	2	26	Fish remains
		480	1300	3	17	
		540	1530	2	18	Tapeworms
		495	1200	9	17	Fish remains
		524	1420	1	18	
		545	1450	8	17	
		485	1040	9	19	Fish remains
		425	710	1	11	
		420	750	1	17	Diptera larvae
		437	800	7	17	Fish remains
24	Franklin Lake 66°55'N x 96°04'W 15/8/79	790	4750	2	43	
		467	880	8	-	
		638	2650	10	23	
		452	850	7	14	
		548	1520	2	21	
		316	280	1	12	Diptera pupae, Trichoptera
		557	1640	8	17	Insects
25	Back River below Franklin Lake 66°58'N x 95°57'W 15/8/79	880	7600	9	32	Fish remains
		790	5500	9	30	
		928	6500	2	34	
		730	3500	9	27	Fourhorn sculpin
		700	3400	9	28	Diptera larvae
		690	2900	2	29	Fish remains

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
26	Back River	818	5600	9	31	Fish remains
	66°58'N x 95°46'W	820	5900	4	28	
	15/8/79	700	2020	8	23	
		760	4020	2	24	
		710	3900	2	30	
		430	750	8	15	Diptera larvae
		395	610	8	7	
		242	160	1	8	Diptera larvae, fish remains
		200	60	1	6	Sculpin
		455	1000	8	14	Diptera larvae, fish eggs
27	Back River	795	4600	2	56	
	66°56'N x 95°46'W	508	1260	2	12	Diptera larvae
	15/8/79	600	2400	8	20	
		425	780	2	-	Diptera larvae
		444	850	8	10	Diptera larvae
		445	870	8	13	
		593	2100	2	27	Diptera larvae, Trichoptera
		550	1680	1	21	Diptera larvae
28	Back River	830	5700	9	37	
	66°58'N x 95°40'W	720	3650	9	28	
	15/8/79	730	4600	2	26	Fish remains
		198	70	0	4	
29	Back River	718	3500	2	23	Fish remains
	66°57'N x 95°38'W	760	5700	2	34	
	15/8/79	760	4900	8	36	
		630	2400	8	26	Diptera larvae
30	Back River	815	5510	9	36	
	66°57'N x 95°24'W	200	80	7	5	
	15/8/79	320	325	7	10	
		450	730	1	16	Diptera pupae
		645	2450	2	20	Isopoda
		652	280	9	21	
Arctic char (*Salvelinus alpinus*)						
6	Lower Garry Lake	542	1620	8	14	Amphipoda
	65°54'N x 99°35'W					
	18/8/79					

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
31	Landlocked lake near Back River 66°04'N x 96°38'W 27/8/79	370	500	5	10	
		352	440	5	11	
		395	550	5	-	
		360	420	5	12	Fish eggs
		354	350	5	15	
		392	440	6	13	
		378	400	4	14	
		358	370	2	15	
		360	415	2	12	
		329	340	2	-	
		348	370	8	10	
		361	380	8	13	
		361	265	12	11	
		382	380	12	15	
		331	370	2	12	
		342	370	2	12	
		350	300	2	13	
Lake whitefish (*Coregonus clupeaformis*)						
1	Garry Lake 66°00'N x 100°15'W 18/8/79	597	3350	10	20	Pelecypoda
		585	3350	0	29	
3	Garry Lake 65°57'N x 100°08'W 18/8/79	615	3800	10	24	
6	Lower Garry Lake 65°54'N x 99°35'W 18/8/79	570	2650	10	22	
8	Back River below Sinclair Falls 66°53'N x 98°31'W 17/8/79	440	1140	8	18	
		440	1200	4	15	
9	Back River above Mount Meadowbank 66°09'N x 97°02'W 14/8/79	350	560	8	15	Gastropoda
10	Back River below Mount Meadowbank 66°10'N x 96°58'W 14/8/79	340	480	2	13	Copepoda
		350	500	8	11	Copepoda
		357	580	8	11	Copepoda
		320	400	2	9	
		367	700	2	14	

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
10	Back River below Mount Meadowbank (continued)	410	920	10	16	
		345	500	8	14	
		400	900	10	-	
18	Back River at mouth of Herman River 66°13'N x 96°10'W 13/8/79	458	1000	8	19	Pelecypoda
19	Unnamed lake on Montresor River 66°20'N x 97°32'W 26/8/79	343	660	3	16	
		352	610	3	14	
		330	540	10	15	
		355	740	10	16	
		359	640	10	17	
		338	620	4	14	
		349	700	10	15	
		318	510	10	11	
		370	720	4	13	
		350	450	3	16	
		360	660	10	17	
		350	630	4	15	
		332	540	4	13	
		371	680	4	12	
		378	720	4	18	
20	Unnamed lake on Montresor River 66°22'N x 97°32'W 26/8/79	328	460	3	14	
		342	600	4	14	
		306	510	3	11	
		328	500	10	12	
		299	370	3	13	
		338	610	10	13	
		320	430	3	13	
		331	530	10	13	
		342	550	3	15	
		365	720	4	13	
		332	520	10	11	
		375	750	8	14	
		335	560	3	17	
		315	470	4	13	
		335	500	4	16	
		355	700	10	16	
		355	600	10	18	
		338	560	4	13	
		332	470	10	12	
		335	500	0	14	

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
21	Back River at mouth of Montresor River	483	1730	10	21	Pelecypoda, Gastropoda
	66°33'N x 95°48'W	402	820	2	15	Pelecypoda
	15/8/79					
22	Franklin Lake	430	990	2	22	Pelecypoda
	66°52'N x 96°05'W	435	940	8	14	Amphipoda
	15/8/79	375	700	2	12	Pelecypoda
		423	950	8	22	Amphipoda
		415	920	9	18	Amphipoda
		370	620	8	14	Notostraca
		417	950	2	21	Notostraca, Pelecypoda
		352	580	7	12	Pelecypoda, chironomidae
		357	590	1	12	Trichoptera
23	Franklin Lake	403	880	4	14	
	66°54'N x 96°04'W	440	1120	10	17	
	15/8/79					
27	Back River	425	940	8	15	
	66°56'N x 95°46'W	415	880	2	17	
	15/8/79	433	1080	3	15	
		430	1130	2	19	
		434	1000	8	19	
		452	1200	9	18	
		345	510	0	10	
		437	1150	3	18	
28	Back River	400	800	3	18	
	66°58'N x 95°40'W	423	1020	4	16	
	15/8/79	415	900	3	20	
		404	840	9	22	
		405	880	2	23	
		400	840	3	16	
29	Back River	405	820	9	16	
	66°57'N x 95°38'W	403	820	3	23	
	15/8/79	398	750	9	16	
		418	800	2	18	
		422	960	3	17	
		428	990	9	19	
		360	600	8	14	
		408	500	3	18	
		380	720	9	16	

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
30	Back River	440	960	9	17	
	66°57'N x 95°24'W	425	960	3	16	
	15/8/79	395	740	9	16	
Round whitefish (*Prosopium cylindraceum*)						
4	Lower Garry Lake	345	1000	10	14	
	65°58'N x 99°59'W	377	550	10	10	
	18/8/79	352	550	10	7	
6	Lower Garry Lake	390	630	10	X	
	65°54'N x 99°35'W					
	18/8/79					
7	Lower Garry Lake	375	590	0	8	
	65°55'N x 99°12'W					
	17/8/79					
9	Back River above	235	110	7	6	Diptera pupae, larvae
	Mount Meadowbank	304	270	9	9	Diptera pupae, larvae
	66°09'N x 97°02'W	345	420	10	8	Diptera pupae, larvae
	14/8/79	300	260	2	9	Diptera pupae, larvae
		210	60	8	5	Diptera pupae, larvae
		102	10	0	1	Diptera pupae, larvae
		320	360	4	8	Diptera pupae, larvae
		320	320	3	9	Diptera pupae, larvae
		354	460	10	12	Diptera pupae, larvae
		280	200	9	6	Diptera pupae, larvae
		365	548	10	9	Diptera pupae, larvae
10	Back River below	224	100	2	6	Diptera larvae
	Mount Meadowbank	225	110	7	7	
	66°10'N x 96°58'W	280	100	1	7	Diptera larvae
	14/8/79					
11	Back River	420	780	10	17	
	66°04'N x 96°43'W	430	1020	4	16	Pelecypoda
	14/8/79					
12	Back River	362	500	10	11	
	66°05'N x 96°31'W	413	550	9	14	
	27/8/79	398	640	4	16	
		428	780	10	16	
		373	570	10	12	
		445	870	9	15	
		318	310	3	10	
		388	570	4	15	
		372	590	4	15	

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
13	Back River 66°04'N x 96°29'W 13/8/79	236	110	7	6	
14	Herman River 66°01'N x 95°29'W 13/8/79	485	1300	9	13	
		410	740	9	8	Chironomid larvae
		405	780	3	8	Chironomid larvae
		415	760	9	10	Chironomid larvae
		370	500	9	9	
		410	850	3	10	Sand
		106	10	0	1	
		108	11	0	1	
		108	9	0	1	
		103	9	0	1	
		103	9	0	1	
18	Back River at mouth of Herman River 66°13'N x 96°10'W 13/8/79	295	260	9	8	Diptera pupae
		231	110	7	6	Chironomid larvae
		230	120	1	6	Diptera pupae
		217	80	7	6	Diptera pupae
		235	120	7	6	Diptera pupae
		197	60	0	-	
19	Unnamed lake on Montresor River 66°20'N x 97°32'W 26/8/79	330	380	4	12	
		281	230	3	7	
		316	320	9	10	
20	Unnamed lake on Montresor River 66°22'N x 97°32'W 26/8/79	313	340	9	7	
22	Franklin Lake 66°52'N x 96°05'W 15/8/79	383	550	4	13	Chironomid larvae
		352	410	10	9	Notostraca
		224	130	0	-	
23	Franklin Lake 66°54'N x 96°04'W 15/8/79	388	500	4	12	
		364	500	10	9	
		353	450	4	8	
		364	460	4	8	
		367	510	4	12	Chironomid larvae
		337	380	9	8	
		377	480	8	13	Chironomid larvae
		293	260	8	9	Chironomid larvae
		274	190	1	7	
		294	250	8	6	

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
24	Franklin Lake	347	440	3	9	
	66°55'N x 96°04'W	365	500	10	10	Chironomid larvae
	15/8/79	344	420	9	12	
		381	560	10	12	Surface insects
		360	430	8	12	
		363	510	10	10	
		342	460	9	9	
		385	510	8	15	Surface insects
		361	490	3	11	
		358	500	10	11	
		350	480	9	11	
		300	260	8	8	
		153	80	0	2	
25	Back River below	300	250	2	13	Chironomid larvae
	Franklin Lake	336	390	4	9	Chironomid larvae
	66°58'N x 95°57'W	340	330	9	5	
	15/8/79	365	-	-	-	
		368	460	3	10	Diptera larvae
		330	-	9	8	
26	Back River	386	580	4	13	
	66°58'N x 95°46'W	300	-	-	5	
	15/8/79	230	-	-	-	
		366	480	4	14	
		290	230	4	8	
		360	520	10	12	
		355	470	10	11	
		370	550	4	10	
27	Back River	318	320	4	6	
	66°56'N x 95°46'W					
	15/8/79					
28	Back River	105	10	-	-	
	66°58'N x 95°40'W					
	15/8/79					
29	Back River	345	360	9	9	
	66°57'N x 95°38'W	350	420	9	11	
	15/8/79					
Lake cisco (*Coregonus artedii*)						
10	Back River below	225	120	3	7	Trichoptera
	Mount Meadowbank					
	66°10'N x 96°58'W					
	14/8/79					

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
12	Back River 66°05'N x 96°31'W 27/8/79	307	300	10	8	
19	Unnamed lake on Montresor River 66°20'N x 97°32'W 26/8/79	220	240	8	8	
25	Back River 66°56'N x 95°46'W 15/8/79	380	660	10	9	
26	Back River 66°58'N x 95°46'W 15/8/79	332	420	4	11	
		365	480	4	10	
30	Back River 66°57'N x 95°24'W 15/8/79	345	500	4	10	
		320	400	4	8	
		325	400	4	8	
		365	640	10	12	
		348	460	4	9	
		330	440	10	8	
		360	500	4	11	
		360	560	10	12	
Arctic cisco (*Coregonus autumnalis*)						
11	Back River 66°04'N x 96°43'W 14/8/79	487	1400	4	17	
		490	1520	10	19	
21	Back River at mouth of Montresor River 66°33'N x 95°48'W 15/8/79	304	310	10	7	
		183	100	0	5	
		185	100	0	5	
		189	120	0	5	
		144	80	0	5	
22	Franklin Lake 66°52'N x 96°05'W 15/8/79	460	1180	3	14	
		446	1180	4	14	
		273	240	4	9	
		122	50	0	3	
25	Franklin Lake 66 55'N x 96 04'W 15/8/79	450	-	4	14	
		471	-	10	17	
		492	-	4	17	
		463	-	10	11	

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
25	Franklin Lake (continued)	485	1400	10	14	
		470	1100	4	13	
		488	1400	10	16	
		476	1240	10	13	
26	Back River 66°58'N x 95°46'W 15/8/79	470	1400	10	14	
		460	1200	10	10	
		468	1300	10	16	
		465	1200	4	16	
		460	1400	4	12	
		470	1260	4	15	
		445	1080	4	9	
		523	1560	10	15	
		453	1200	10	13	
		469	1320	4	13	
		415	900	10	12	
		444	1080	4	13	
		470	1320	10	14	
		448	1080	4	14	
		464	1180	10	16	
		490	1440	10	10	
		420	790	4	14	
		445	1100	10	12	
		450	1180	10	11	
		448	1060	4	14	
		445	1100	4	11	
		454	1280	4	12	
		460	1170	10	13	
		440	960	10	12	
		420	880	4	12	
		466	1040	4	12	
		470	1060	4	14	
		368	590	4	12	
Arctic grayling (*Thymallus arcticus*)						
2	Garry Lake 65°59"n x 100°15"W 18/8/79	400	800	2	8	
		320	460	2	6	
		358	520	8	6	
		360	550	8	6	
		395	720	2	7	
		332	410	7	7	
		293	300	7	6	
12	Back River 66°05'N x 96°31'W 27/8/79	312	360	8	8	

Table I. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
23	Franklin Lake 66°54'N x 96°04'W 15/8/79	324	400	2	7	Insects
24	Franklin Lake 66°55'N x 96°04'W 15/8/79	373	690	8	10	Insects
Burbot (*Lota lota*)						
2	Garry Lake 65°59'N x 100°15'W 18/8/79	250	90	0	9	Fish remains
13	Back River 66°04'N x 96°29'W 27/8/79	641 677	1600 2050	2 8	14 16	Round whitefish
19	Unnamed lake on Montresor River 66°20'N x 97°32'W 26/8/79	659	2200	6	18	

Table II. Fisheries resource sampling raw data, rivers entering Queen Maud Gulf, NWT.

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
Lake trout (*Salvelinus namaycush*)						
1	Unnamed lake	570	1650	8	15	
	65°27'N x 102°43'W	440	1000	8	17	
	23/8/79	455	800	1	12	
		382	700	1	14	
		102	10	0	2	
2	Unnamed lake	460	940	2	10	
	67°26'N x 102°42'W	606	2150	8	16	
	23/8/79	530	1370	2	12	
		407	560	1	12	
		340	360	7	9	
		200	80	0	6	
3	Perry River	670	3200	10	32	
	below falls	602	2500	9	31	Fish eggs
	67°13'N x 101°51'W	670	3250	8	19	Fish remains
	23/8/79	650	3000	2	24	
		493	1200	8	22	
		422	780	8	21	Small mammal
5	Perry River	774	4600	9	46	
	above falls	482	1080	8	28	
	67°10'N x 101°50'W	467	460	7	13	Fish remains
	23/8/79					
8	Simpson River	650	2750	2	19	
	67°45'N x 100°38'W	574	2000	2	21	Fish remains
	25/8/79	617	2400	6	18	
		430	1000	2	10	
10	Simpson River	595	2200	2	20	Fish remains
	67°42'N x 100°36'W					
	25/8/79					
11	Unnamed lake	820	6600	8	44	Whitefish remains
	66°49'N x 103°10'W	648	3000	9	36	
	24/8/79	534	1590	9	15	
		600	2200	2	38	Fish remains
		690	3550	9	32	
12	Unnamed lake	665	2800	8	23	
	66°46'N x 103°10'W	685	3400	9	36	
	24/8/79	625	2950	2	26	
		780	4000	2	47	

Table II. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
12	Unnamed lake (continued)	650	2850	2	25	
		682	2900	9	35	
		449	970	1	14	
14	MacAlpine Lake 66°43'N x 102°58'W 24/8/79	592	2900	8	14	Fish remains
15	MacAlpine Lake 66°37'N x 102°51'W 24/8/79	582	2400	8	18	Coregonid remains
		620	3200	8	29	Fish remains
		522	1500	2	17	Fish remains
		373	510	1	14	
		488	1230	2	16	Fish remains
		474	1050	2	22	
		313	300	3	12	
		475	1320	4	19	Trichoptera
		210	90	7	10	
16	Perry River 66°52'N x 102°17'W 24/8/79	620	4500	8	26	Whitefish remains, mammal
		515	1450	8	26	Trichoptera
		420	720	1	15	
		455	980	2	22	Trichoptera
		358	430	1	11	Trichoptera
		540	1550	4	29	
		475	1210	2	26	
		810	6200	8	54	
		610	2150	2	25	
		610	2550	3	28	
		585	2200	3	31	Ninespine stickleback
		420	700	2	19	
		386	610	7	10	Trichoptera
18	Unnamed lake 66°32'N x 98°23'W 26/8/79	782	5250	12	43	
		682	3150	12	34	
		615	2500	2	34	
		598	1320	8	19	
		472	1110	1	21	
		512	1340	8	42	
		534	1570	2	23	
		480	1180	3	28	
		465	1110	8	17	Fish remains
		385	630	1	16	

Table II. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
Arctic char (*Salvelinus alpinus*)						
17	Simpson River 66°42'N x 98°58'W 26/8/79	488	1490	8	11	
Lake whitefish (*Coregonus clupeaformis*)						
2	Unnamed lake 67°26'N x 102°42'W 23/8/79	532	2600	3	20	
		552	2950	10	29	
		510	1950	4	22	
		530	2500	3	24	
		415	990	6	9	
		394	900	2	9	
		397	920	8	9	
3	Perry River below falls 67°13'N x 101°51'W 23/8/79	300	350	1	15	
		345	470	2	15	
8	Simpson River 67°45'N x 100°38'W 25/8/79	358	690	8	9	
11	Unnamed lake 66°49'N x 103°10'W 24/8/79	318	470	9	13	
		328	460	9	13	
		290	360	1	14	
		330	500	3	13	
		325	430	9	16	
		280	300	7	9	
		310	380	9	10	
		261	240	1	7	
		315	420	9	14	
		349	520	3	19	
		330	520	3	14	
12	Unnamed lake 66°46'N x 103°10'W 24/8/79	300	400	3	16	
		326	390	8	15	
		311	440	9	16	
		255	250	1	9	
		298	350	9	13	
		310	410	3	13	
		320	480	4	12	

Table II. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
15	MacAlpine Lake	532	2250	9	21	
	66°37'N x 102°51'W	530	1050	9	21	
	24/8/79					
16	Perry River	395	980	3	17	
	66°52'N x 102°17'W	208	100	0	-	
	24/8/79	250	200	0	6	
		183	70	0	6	
17	Simpson River	352	840	0	11	
	66°42'N x 98°58'W					
	26/8/79					
18	Unnamed lake	355	600	10	18	
	66°32'N x 98°23'W	338	560	4	13	
	26/8/79	332	470	10	12	
		335	500	-	14	
Round whitefish (*Prosopium cylindraceum*)						
5	Perry River	212	100	0	7	
	above falls	127	40	0	4	
	67°10'N x 101°50'W					
	23/8/79					
13	Unnamed lake	380	680	10	9	
	66°46'N x 103°07'W	340	430	4	6	
	24/8/79	385	650	10	8	
		382	690	10	9	
		308	310	4	6	
		318	360	10	6	
		231	120	7	4	
		318	325	10	6	
		316	360	10	5	
		318	390	10	6	
		382	640	10	7	
		323	360	4	6	
		120	15	0	1	
		230	120	7	4	
		228	120	7	4	
		330	400	10	6	
		243	140	4	4	
		233	120	4	4	
		214	100	7	4	

Table II. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
Lake cisco (*Coregonus artedii*)						
2	Unnamed lake	570	1650	8	15	
	67°26'N x 102°42'W	440	1000	8	17	
	23/8/79	455	800	1	12	
		382	700	1	14	
		102	10	0	2	
3	Perry River below falls	220	110	10	6	
	67°13'N x 101°51'W					
	23/8/79					
5	Perry River above falls	195	70	4	5	
	67°10'N x 101°50'W					
	23/8/79					
11	Unnamed lake	165	-	-	2	
	66°49'N x 103°10'W	105	15	-	2	
	24/8/79					
12	Unnamed lake	160	50	10	3	
	66°46'N x 103°10'W	132	40	-	2	
	24/8/79	120	20	-	1	
15	MacAlpine Lake	283	260	10	8	
	66°37'N x 102°51'W					
	24/8/79					
Least cisco (*Coregonus sardinella*)						
7	Simpson River	193	80	7	6	
	67°48'N x 100°37'W					
	25/8/79					
8	Simpson River	215	120	2	7	
	67°45'N x 100°38'W	222	110	10	7	
	25/8/79					
17	Simpson River	230	100	4	4	
	66°42'N x 98°58'W	270	190	9	5	
	26/8/79	222	130	3	5	
		220	90	0	3	
		225	160	3	-	
		220	130	3	5	
		204	120	1	5	

Table II. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
17	Simpson River (continued)	252	230	9	6	
		232	160	4	5	
		115	110	3	5	
		198	100	3	3	
		194	90	4	3	
Arctic cisco (*Coregonus autumnalis*)						
8	Simpson River 67°45'N x 100°38'W 25/8/79	510	2000	9	18	
		442	1090	3	12	
		475	1640	9	11	
		210	90	7	6	
		250	210	7	6	
		248	165	1	6	
		275	190	1	5	
		203	110	1	6	
		205	100	1	5	
10	Simpson River 67°42'N x 100°36'W 25/8/79	380	670	9	7	
		335	520	3	6	
Arctic grayling (*Thymallus arcticus*)						
6	Unnamed lake 67°10'N x 101°55'W 23/8/79	333	500	8	8	
		217	125	8	6	
		222	140	8	-	
Longnose sucker (*Catostomus catostomus*)						
3	Perry River below falls 67°13'N x 101°51'W 23/8/79	475	970	-	-	
		375	700	-	-	
		373	650	-	-	
		370	600	-	-	
		392	740	-	-	
		396	770	-	-	
4	Perry River above falls 67°12'N x 101°51'W 23/8/79	316	370	-	-	
5	Perry River above falls 67°10'N x 101°51'W 23/8/79	378	660	6	-	
		318	400	-	-	
		305	360	-	-	

Table II. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
16	Perry River 66°52'N x 102°17'W 24/8/79	180 377 420 260 410 390 406	70 780 980 230 930 810 880	- - - - - - -	- - - - - - -	
Burbot (*Lota lota*)						
11	Unnamed lake 66°49'N x 103°10'W 24/8/79	515	940	-	14	Notostraca
16	Perry River 66°52'N x 102°17'W 24/8/79	455 388	440 320	7 -	15 13	
Ninespine stickleback (*Pungitius pungitius*)						
6	Unnamed lake 67°10'N x 101°55'W 23/8/79	85	10	-	-	
Fourhorn sculpin (*Myoxocephalus quadricornis*)						
7	Simpson River 67°48'N x 100°37'W 25/8/79	262 210	120 90	- -	- -	
Arctic flounder (*Liopsetta gracilis*)						
8	Simpson River 67°45'N x 100°38'W 25/8/79	213	120	-	-	
Saffron cod (*Eleginnus navaga*)						
8	Simpson River 67°45'N x 100°38'W 25/8/79	239	100	-	-	

Table III. Fish resource sampling raw data - Thelon River, NWT.

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
Lake trout (*Salvelinus namaycush*)						
1	Lake adjoining Thelon River 64°37'N x 101°36'W 30/8/79	679	3000	2	21	
		618	2200	7	26	Ninespine stickleback
		521	1430	2	13	
2	Thelon River near W.S.C cabin 64°32'N x 101°25'W 30/8/79	580	1900	6	16	
		492	1330	5	16	
4	Thelon River 63°58'N x 103°53'W 31/8/79	682	2900	6	26	
		731	3600	9	22	
		712	3200	8	31	
		566	1840	8	21	Coregonus sp.
		599	2030	8	14	
		528	1530	2	15	Longnose sucker
5	Lake adjoining Thelon River 63°57'N x 103°54'W 31/8/79	691	3300	6	40	
6	Thelon River 63°47'N x 104°11'W 31/8/79	555	1920	8	20	Fish remains
Lake whitefish (*Coregonus clupeaformis*)						
1	Lake adjoining Thelon River 64°37'N x 101°36'W 30/8/79	491	1530	4	23	
		431	1210	11	13	
		426	1110	6	11	
		434	1140	4	12	
		453	1140	10	14	
		421	1000	4	14	
2	Thelon River near W.S.C. cabin 64°32'N x 101°25'W 30/8/79	432	1040	6	17	
		449	1100	6	17	
		480	1330	6	19	
		453	1100	6	14	
4	Thelon River 63°58'N x 103°53'W 31/8/79	486	1500	3	9	
		440	1140	3	16	
		451	1220	3	12	
		503	1750	3	16	
		502	1820	3	20	
		438	1020	3	11	

Table III. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
5	Lake adjoining Thelon River 63°57'N x 103°54'W 31/8/79	381	-	8	9	
		304	290	8	9	
		339	410	7	9	
		314	320	7	9	
		361	550	8	12	
		404	830	2	10	
		356	520	2	10	
6	Thelon River 63°47'N x 104°11'W 31/8/79	527	1820	9	14	
		490	1440	3	9	
		455	1170	8	11	
		482	1570	8	15	
		458	1210	8	14	
		411	900	2	11	
		468	1400	8	14	
		452	1080	2	12	
		464	1290	4	10	
Round whitefish (*Prosopium cylindraceum*)						
1	Lake adjoining Thelon River 64°37'N x 101°36'W 30/8/79	412	850	4	11	
		345	460	11	7	
3	Thelon River 64°02'N x 103°51'W 31/8/79	276	200	3	6	
4	Thelon River 63°58'N x 103°53'W 31/8/79	231	110	7	4	
		190	60	0	3	
		264	165	2	6	
		229	100	7	4	
		199	80	7	3	
		204	75	7	3	
		192	60	0	3	
Lake cisco (*Coregonus artedii*)						
6	Thelon River 63°47'N x 104°11'W 31/8/79	272	50	3	3	

Table III. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
Arctic grayling (*Thymallus arcticus*)						
3	Thelon River 64°02'N x 103°51'W 31/8/79	310	320	3	7	
6	Thelon River 63°47'N x 104°11'W 31/8/79	298	290	3	6	
		315	385	9	7	
Northern pike (*Esox lucius*)						
5	Lake adjoining Thelon River 63°57'N x 103°54'W 31/8/79	600	1400	3	5	
		660	2040	9	6	
6	Thelon River 63°47'N x 104°11'W 31/8/79	772	2850	8	13	Fish remains
Longnose sucker (*Catostomus catostomus*)						
2	Thelon River near W.S.C. cabin 64°32'N x 101°25'W 30/8/79	348	400	-	-	
4	Thelon River 63°58'N x 103°53'W 31/8/79	108	18	-	-	
		181	65	-	-	
		162	50	-	-	
		92	10	-	-	
		120	24	-	-	
		104	16	-	-	
		122	24	-	-	
		166	70	-	-	
Slimy sculpin (*Cottus cognatus*)						
6	Thelon River 63°47'N x 104°11'W 31/8/79	83	6	-	-	

Table IV. Fish resource sampling raw data - Quoich River, NWT.

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
Lake trout (*Salvelinus namaycush*)						
1	Quoich River	672	3100	8	47	
	65°58'N x 94°11'W	614	2600	8	29	Small mammal
	21/8/79	505	1420	2	25	
		420	760	8	19	Sculpin sp.
		510	1380	2	29	Fish remains
		440	910	2	21	Fish remains
		410	720	8	17	Diptera larvae
		388	600	2	16	
		293	280	2	10	
		340	370	2	10	
		530	1560	8	28	Sculpin, small mammal
2	Quoich River	705	4000	2	36	Fish remains
	65°48'N x 94°02'W	473	950	2	28	Small mammal
	21/8/79	391	640	9	18	
		352	510	9	29	
		254	210	2	9	
		240	150	7	9	
3	Quoich River	795	4800	2	49	
	65°47'N x 94°00'W	700	3400	2	31	
	21/8/79	670	3100	2	29	Small mammal
		620	2500	8	29	Sculpin
		602	2000	8	22	Notostraca
		718	3200	2	33	
		442	990	8	21	Pelecypoda
		388	680	2	14	Notostraca, Pelecypoda
		520	1320	8	21	Coregonus sp.
		340	370	2	10	Fish remains
4	Quoich River	735	4650	2	45	Two fish
	65°02.5'N x 94°42'W	847	5000	8	39	
	21/8/79	661	3300	8	29	Fish remains
		550	1590	2	22	Fish remains
		432	860	8	15	
		400	620	8	16	
		340	440	2	17	
		325	390	7	12	Lake trout
		286	260	1	11	
		308	330	1	11	
		320	350	8	15	
		293	260	1	11	
		320	380	8	15	
		320	380	1	13	

Table IV. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
4	Quoich River (continued)	235	280	1	10	Trichoptera
		340	440	8	15	
		320	360	2	-	
		230	140	0	8	
		282	280	8	11	Fish remains
		380	390	7	10	
5	Junction of Quoich and Tehert rivers 64°50'N x 94°51'W 21/8/79	748	4450	8	41	Lake trout
		705	3500	8	30	Diptera pupae
		829	5500	2	52	
		730	4150	8	29	
		450	680	1	14	Fish remains
		394	600	7	14	Small mammal, fish remains
		394	560	8	21	Diptera larvae
		337	470	1	15	Fish remains, Trichoptera
		397	730	2	20	Pelecypoda
		362	520	1	12	
		327	350	1	12	
		285	260	7	12	
		286	300	10	14	
		231	140	0	8	
		201	100	0	8	Trichoptera
		122	~20	0	4	
		105	~20	0	4	
6	Quoich River 64°56'N x 94°48'W 21/8/79	534	1660	8	19	Fish remains
		342	420	7	12	
		320	350	3	13	Fish eggs
		333	400	2	15	
		525	1360	8	19	Insects
		320	350	3	16	Fish remains
		263	220	8	11	Chironomid larvae
		243	130	7	8	
		260	200	7	11	Simuliidae larvae
		252	180	7	8	Fish remains
		205	90	1	-	Fish remains
		358	400	8	22	
		242	170	1	8	
		150	50	1	5	
		181	70	1	5	

Table IV. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
Arctic char (*Salvelinus alpinus*)						
2	Quoich River 65°48'N x 94°02'W 21/8/79	380	590	4	13	(Landlocked)
Round whitefish (*Prosopium cylindraceum*)						
1	Quoich River 65°58'N x 94°11'W 21/8/79	410	730	4	16	
		358	440	8	11	
		368	500	9	12	
		349	430	10	8	
		260	180	7	6	
		269	200	1	7	
		410	710	4	15	
		392	620	4	12	
2	Quoich River 65°48'N x 94°02'W 21/8/79	345	420	10	-	
		328	380	10	-	
3	Quoich River 65°47'N x 94°00'W 21/8/79	392	630	10	18	
		382	520	10	13	
		375	570	4	13	
		363	510	10	12	
		402	740	10	17	
4	Quoich River 65°02.5'N x 94°42'W 21/8/79	380	590	10	12	
5	Junction of Quoich and Tehert rivers 64°50'N x 94°51'W 21/8/79	302	280	10	8	
		303	280	4	9	
		287	240	10	8	
		245	140	7	8	
6	Quoich River 64°56'N x 94°48'W 21/8/79	320	330	-	8	
Arctic grayling (*Thymallus arcticus*)						
4	Quoich River 65°02.5'N x 94°42'W 21/8/79	323	430	2	7	
		330	440	2	7	

Table IV. (Cont'd.)

Site	Sampling Location and Date	Length (mm)	Weight (g)	Sex	Age (yr)	Stomach Contents
Slimy sculpin (*Cottus cognatus*)						
4	Quoich River	77	4.7	-	-	
	65 02.5'N x 94 42'W	83	6.3	-	-	
	21/8/79	73	3.5	-	-	
		72	3.4	-	-	
		95	1.5	-	-	
		65	8.2	-	-	
		68	2.0	-	-	
		74	2.5	-	-	
		53	3.9	-	-	

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